

TRANSACTIONS

OF A

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FOR THE

IMPROVEMENT

OF

MEDICAL AND CHIRURGICAL

KNOWLEDGE.

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1871

OF THE

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XXXVIII. A Case of a large Stone in the

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By J. B. Jones, Esq.

TRANSACTIONS, &c.

1. *Observations on the Case of a Woman who died with a Fœtus in the Fallopian Tube.*
By JOHN CLARKE, M. D. Read October 3, 1793.

IN the former Volume of these Transactions, I laid before the Society an account of a fatal hæmorrhage arising from a spontaneous laceration of the fallopian tube, in a case of an extra-uterine foetus.

Since that time I have met with another case of a similar nature, in which the full period of gestation had been completed, and natural efforts seem to have been employed in attempting to discharge the foetus. The history, as far as it could be collected from the woman and her friends, was as follows :

B. C. when about forty years of age, supposed that she became pregnant in December,
Vol. II. B ber,

ber, 1790, having missed her menstruation, which before that time, except when she was pregnant, had always been regular*. The commencement of her pregnancy was attended with morning sickness, and the other symptoms which usually accompany that state. The sickness lasted about four or five months, after which she continued to increase in size till she had attained that of a woman at the conclusion of pregnancy, when she hourly expected to fall into labour.

At this time she was attacked with violent pains, shooting from her back towards the navel, for three or four successive days, yet no advancement was made towards delivery. At last the pains left her, and never returned.

This circumstance, added to the opinion of a person who attended her, induced her to think that she had been mistaken in imagining herself pregnant; and the more so from finding after some time that her bulk gradually diminished.

Some months now elapsed without her

* About eighteen years ago she bore a child, which lived to the age of nine years; and since that time she had once miscarried.

being sensible of any material alteration, except that of her general health declining, so that she had been several times confined to her bed for a week or two together. At length she began to feel constant pain near the middle, and towards the lower part of the cavity of the abdomen. This was succeeded by a swelling near the navel, which increased till it formed a tumour, the diameter of which was from three to four inches. It should be observed, that about two months before her admission into the hospital, some small openings took place on the surface, which discharged a very fetid fluid matter: these were healed in consequence of local applications from time to time*. The skin covering the swelling was very much stretched, and soon became extremely red and tender when touched. The contents of the swelling were evidently hard and irregular. After a little time an ulceration began to take place on the surface, extending from the navel a little towards the right side. This produced a communica-

* At this time (September 1792) she was admitted a patient into St. Bartholomew's Hospital.

tion with the inside of the tumour, from which issued a considerable quantity of an extremely fetid, sanious fluid. The opening gradually enlarging, several bones of a full-grown foetus were discharged through it, as some of the ribs, vertebræ, the temporal bones, a parietal bone, half of the lower jaw, &c. Whilst these bones were coming away, her stools became very offensive, resembling in their smell the discharge from the fore at the navel.

Soon after this the woman began to lose her flesh and strength; her pulse became weak, small and frequent; symptoms of great irritation supervened, and at last she was cut off.

Leave was obtained to examine the body, which was accordingly done. I was present when it was opened by Mr. Abernethy, by whose favour I am in possession of the parts from which the drawings annexed to this paper were taken. The attention was of course directed to the organs concerned in conception. The uterus was found to be in its natural situation, but nearly twice as large as when unimpregnated, and thicker in its substance. The peritonæal coat of this

viscus had become thicker than a crown-piece, in consequence, as I suppose, of the inflammation communicated to it from the surrounding parts. In the cavity of the uterus nothing remarkable was found. The two fallopian tubes were pervious from the uterus towards their fimbriated extremities, and as the parts were involved in some obscurity from the effects of inflammation, small bougies were introduced into their orifices, that their course might be more easily detected by dissection. Upon tracing them, that in the left orifice led to the usual termination of the tube at the fimbriæ: but that in the right led to a cyst in which were contained the remainder of the bones, not discharged through the aperture at the navel.

The anterior part of the cyst had been attached to the peritonæum, lining the muscles of the abdomen, so that there was no communication between it and the general cavity.

The posterior surface of the cyst lay upon the mesentery, to which it had become closely united, so as to form one substance with it. The consequence of this was, that

a portion of the intestine very nearly surrounded the cyst*. Ulceration had also begun towards the sides of the cyst, which lay nearest to the intestines, and had actually formed two openings into the intestinal canal, through which a part of the fluid contents of the cyst had been evacuated during the life of the patient, giving the peculiar smell to the fæces, which has been before observed.

The cyst, at the time when it was examined, was no larger than barely sufficient to contain the bones then in it, all of which were as perfectly free from the smallest appearance of cartilage, ligament, as well as of any other soft substance, as they could have been made by the nicest dissection and maceration.

I may farther observe, that nothing corresponding to any of the soft parts had been discharged, so that the whole of these, together with the placenta and membranes (of which no vestige remained) must have been changed into the matter discharged through the openings.

* See Plates 1, 2.

OBSERVATIONS.

To the preceding history of the case and dissection of this woman I shall add a few observations, arising out of this case and that described in the former volume.

No fact in physiology appears to me to be better ascertained, than that the power of conception in the female is altogether and exclusively confined to the *ovaria*; yet when the foetus is once produced, it may be nourished, and will grow in any living cavity, to which it may become attached, as well as in the uterus. All that it requires is nutrition, and perhaps the influence of pure air on the fluids of the foetus; these it appears that other parts are capable of sufficiently communicating.

It has been objected to this opinion, in the case described in the former volume, as pregnancy had only advanced a few weeks, it was possible that the process could not be extended beyond that time in the fallopian tube, and that this was the reason why it burst. But many cases on record, and that of this woman, clearly refute this objec-

tion, since it is evident, both from the history of the case and the magnitude of the bones, that the full term of nine months must have been completed.

There is another point not unworthy of observation in this case, and which has occurred in others of the same nature; that pains exactly resembling those of labor came on at the end of nine months.—I shall not attempt to explain this, but shall just remark, that it confutes all those theories respecting the cause of labor, which are founded on the presence of the child in the uterus.

Another thing to be observed is, that the foetus seems to have died as soon as the period of nine months was at an end. If we suppose that this depends upon any thing in the economy of the child, which will not allow it to subsist under the circumstance of a want of exposure of it's blood to vital air after that time, it would prove a stronger resemblance in this respect of viviparous to oviparous animals than we have been generally disposed to admit, or than we have been well warranted in believing. In the latter we know, that the
in-

internal structure of the egg regulates the time of its being hatched, more than the degree of heat to which it may be exposed, as is perpetually proved in the instance of placing hens eggs under a duck, or ducks eggs under a hen.

There is another thing which ought not to be overlooked in this case. Whilst the foetus continued to be alive, its presence in the fallopian tube conveyed no particular sensation, or inconvenience to the mother, more than if it had been in the cavity of the uterus, since it does not appear that she was aware of any peculiarity in this pregnancy, and she was certainly well qualified to judge, having been twice in that state before.—This, I think, proves that the sack formed in the Fallopian tube was in a sound state. If inflammation, or ulceration had been going on in it, some derangement of the system, or local inconvenience would most probably have been the consequence, which could not fail to have conveyed sensations of uneasiness to the mother.

But as soon as the child died, it began to produce the same efforts on the surrounding

rounding parts, as any other dead animal matter would have done. In the present instance, the natural powers of the body seem to have been engaged in executing a particular operation. Inflammation was produced, the first effect of which was to unite the surface of the cyst to the interior surface of the peritonæum. After this, the sides of the cyst began to ulcerate, both where this adhesion had formed, and also where they lay in contact with the intestine. During all this time, the putrefaction of the child going on, every thing belonging to it, except the bones, was converted into an uniform sanious fluid. —At last, the ulceration having extended itself to the intestine, and to the skin covering the navel, this fluid was discharged, and afterwards some of the bones, when the farther effects of this process were interrupted by the death of the patient.

If the woman had not been worn out by the irritation, there is no reason, a priori, why she might not have recovered*.

Every

* Mr. Jacob, a very sensible and judicious practitioner at Feversham in Kent, has described a case in the 8th volume of

Every thing was in a right train towards her perfect recovery.—The bones had been in part discharged, and the cyst was very much reduced in its capacity. It had once been large enough to contain the whole child, together with the placenta, and liquor amnii; but by the time of her death it was diminished, so as barely to hold the bones, which still remained in it. A continuation of the same process would have left the woman in the same state as before she conceived; excepting the injury which the fallopian tube must have sustained.

With regard to the manner in which the cyst became less, I am apt to believe that this must have depended on absorption, as the contents were evacuated; because, although there is good reason to suspect, from the descent of the ovum

of the London Medical Journal, where the patient actually did recover, after all the bones of a fetus had been in a similar manner evacuated from an abscess. The similarity of many of the circumstances in the two cases leads me to think, that in his case the child must have been in the fallopian tube. The bones which were discharged have been presented to me by Mr. Jacob, and are now in my possession.

through

through it to the uterus, that the fallopian tube is furnished with muscular fibres; yet the thinness of the sides of the cyst seem strongly to oppose the idea of its contraction depending either on muscular action, or elasticity. If this had been the case, they would have become thicker, as happens to the uterus, the thickness of which is very much increased by the contraction, which takes place upon the expulsion of the child and placenta.

We find in authors, and in detached papers published by different societies in Europe, a number of histories of extra-uterine foetuses, of which some have been found in the ovary, some in the fallopian tube, and others in the abdomen.

Of these some are detailed with accuracy; others are very obscurely related; and a few are connected with circumstances so improbable, as to merit little attention.

Dr. Garthshore has been at great pains to collect the best authenticated cases of extra-uterine conceptions, and has arranged them in a very perspicuous manner,

ner, in a paper, published in the year 1787 *.

Upon an attentive consideration of them it will, I think, appear, and it is confirmed by the case which has been now related, and that in the first volume of these Transactions, that there are no symptoms sufficiently characteristic of conceptions in the fallopian tube, to enable us to discriminate between them and common gestation in the uterus.

It farther seems not to be an uncommon consequence of conceptions in the fallopian tube, that the tube bursts. Of this accident the consequences will be various, and will depend on many circumstances.

If the cyst should be ruptured near the part where the placenta adheres, an hæmorrhage must ensue, which will be more or less in quantity according to the size and number of the lacerated vessels.

If the quantity should be very large, the destruction of the patient must fol-

* Vide London Medical Journal, Vol. 8.

low, as happened in the case alluded to before *.—If, however, the lacerated part should be of less extent, more distant from the attachment of the placenta, and if the number and size of the divided vessels should be small, then either the laceration may be healed by the coagulated blood forming a living substance and uniting with the torn cyst:—or the extravasated blood (if in small quantity) may be absorbed, and the laceration still remaining, the ovum may grow on that side towards the cavity of the abdomen; and as upon examination after death the membranes would appear immediately within the parietes of the abdomen, this might give occasion to a supposition that the ovum adhered to some part of the general cavity of the abdomen, when in fact the point of adhesion was to the fallopian tube †.

Many

* See Vol. I. of these Transactions.

† This opinion will probably derive additional strength from the following circumstance. Some years ago I had the opportunity of seeing a case, which had been examined and was supposed to have been a true ventral case: but by a more critical investigation of the parts afterwards, it appeared that the cyst containing the ovum was certainly a part of the appendages

Many of the supposed cases of ventral conceptions have been so inaccurately described, as to leave room to conjecture, that they may have sometimes been of this kind.

There are so many obstacles to prevent the ovum, when first detached from the ovarium, from acquiring an adhesion in the cavity of the belly, where the intestines, bladder, &c. are from the very nature of their functions in perpetual motion, as to make the possibility of it very doubtful.

Whilst I offer this idea however, I beg that it may be understood to be rather a matter of conjecture, to be confirmed by future experience, than as a thing which I have had any opportunity of deciding by absolute inspection.

pendages of the uterus, because it was supplied by the spermatic artery.

EXPLA-

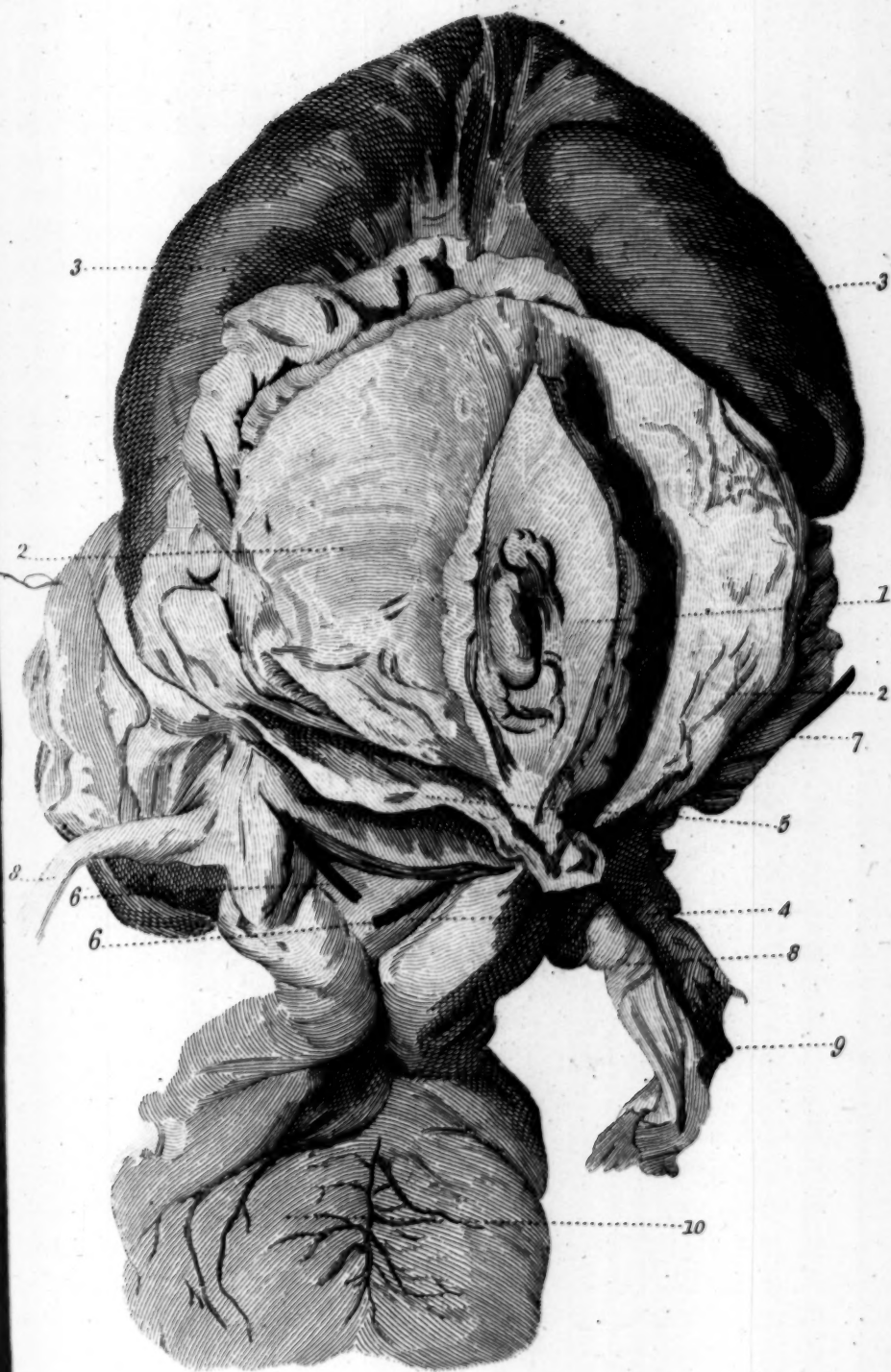
EXPLANATION of the PLATES.

P L A T E I.

*Anterior View of the Parts concerned in the
Case described by Dr. CLARKE, No. I.*

1. Part of the common integuments of the abdomen, shewing the ulcer through which the bones were discharged during the patient's life.
2. A portion of the muscular parietes of the abdomen.
3. Part of the small intestines.
4. The uterus cut open so as to shew its cavity.
5. The peritonæal covering of the uterus thickened by preceding inflammation.
6. Two bougies inserted in the Fallopian tubes leading from the cavity of the uterus.
7. The termination of the left fallopian tube at the fimbriæ.
8. The round ligaments.
9. Part of the broad ligament of the left side.
10. The vagina cut open, so as to shew its posterior surface.

PLATE



C. Kirkland del.

W. Skelton sculp.

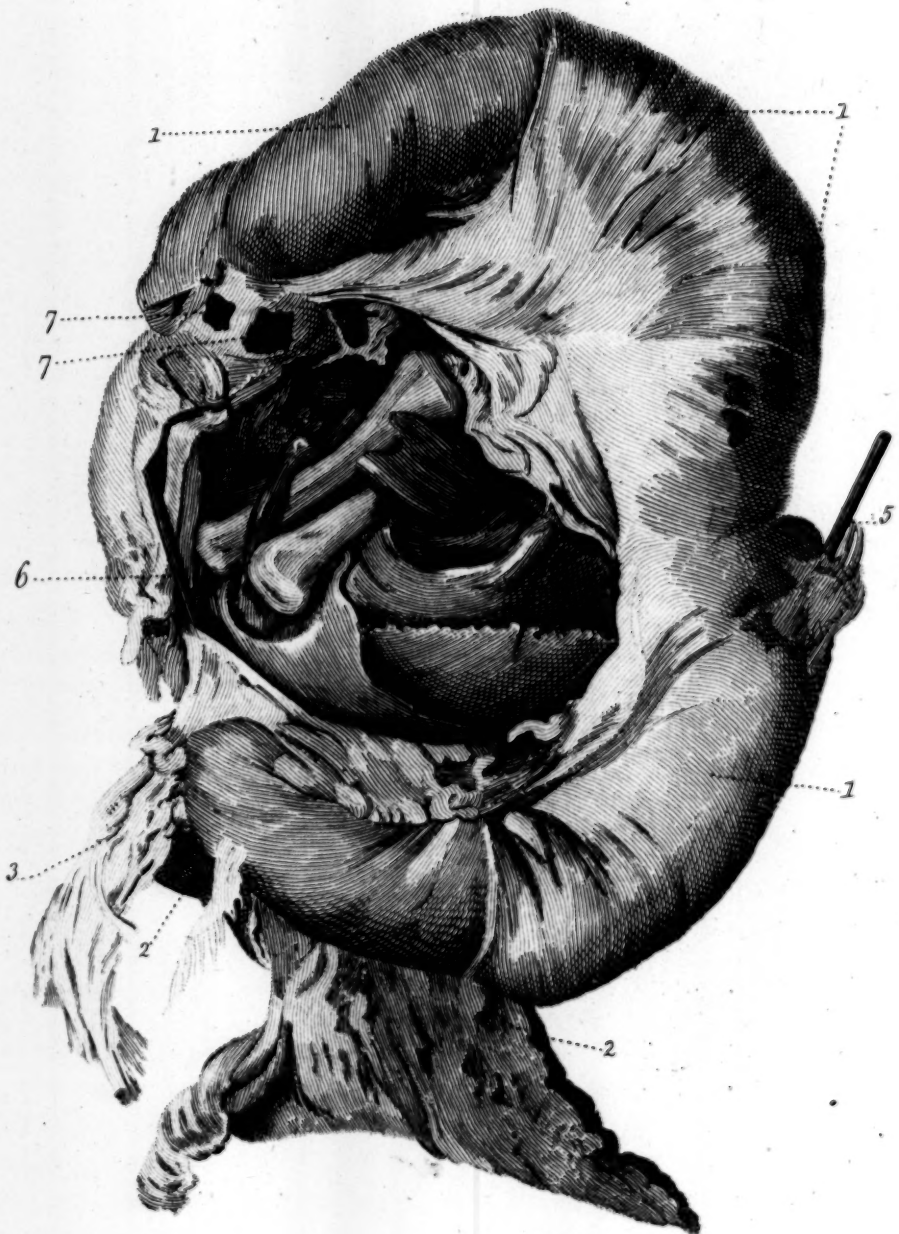


PLATE II.

*Posterior View of the Parts concerned in the
Case described by Dr. CLARKE, No. I.*

1. A portion of the small intestines.
2. Part of the uterus and vagina.
3. The round ligament, and part of the broad ligament of the left side.
4. The round ligament of the right side.
5. The bougie inserted into the right fallopian tube, and terminating at the fimbriæ.
6. The bougie inserted into the left fallopian tube, terminating in the cyst, containing those bones of the foetus which had not been discharged through the orifice at the navel.
7. Two ulcerated openings in the intestine communicating with the cavity of the cyst.

II. *Account of a Case in which Death was brought on by a hæmorrhage from the Liver.*

By G. BLANE, M. D. F. R. S. &c. Read May 6, 1794.

A BOY, aged eight years, of a delicate constitution, small stature, and pale complexion, whose family on the father's side had been extremely subject to phthisis pulmonalis, but he himself having no symptoms of scrofula or rickets, or any external blemish or deformity, except that his belly had always been too large, and he had been subject to complaints of the stomach and bowels through life, began to complain on the 12th of March, 1794, of languor, loss of appetite, and slight pains, which he referred to his breast and stomach. These symptoms continued the same next day, but became more severe on the 14th, and remained so the three following days, on the last of which he became feverish, and there was an eruption of red spots on the neck and breast, which lasted only a few hours. On the 18th and 19th, the symptoms were milder, and he was thought to be

be recovering; but in the night between the 19th and 20th, he was seized with a severe pain, which he referred to the left hypochondrium. This continued between five and six hours, and he then became suddenly faint, and losing all sense and motion was thought to be in a swoon, but from this he never recovered.

This is the account which I received from the family and the medical gentleman who attended, for I did not see him during his illness; and not having been sent for till he was in extremities, he had died before I arrived.

Leave was obtained to examine the body, and the following appearances were observed. Upon laying open the abdomen, a large quantity of coagulated blood was discovered, covering the whole left side of the intestines. In exploring the source of this, several fissures were observed in the left lobe of the liver, which were about two thirds of an inch in length, whence the blood had undoubtedly flowed, for they were found to lead to a cavity in the substance of the lobe of about the size of a pigeon's egg, and full of blood. The peritonæum, on the surface

of that part of the liver which was near one of the fissures, was raised from the liver like a blister, full of coagulated blood. These appearances were on the lower surface of the lobe, but on the upper surface of the same lobe there was one fissure, round which was a similar collection of blood between the peritonæum and the substance of the liver, and it led to a small bloody cavity near the surface of the liver,

It would appear, that the accumulation of blood from the ruptured vessels formed the cavities, and produced the pain by the gradual distention; and that the liver, being at last lacerated, a sudden effusion of blood took place, which occasioned death. There was no appearance of increased vascularity, tumefaction, or other marks of inflammation or abscess in the liver, but the whole substance of it was more soft and tender than natural. I found, upon enquiry, that he had never been affected with a rigor either at the beginning or during the course of his illness, though he was at all times remarkably chilly, which seemed to be owing to general languor, and the natural weakness of his constitution.

As the liver has been known to be fissured by external violence*, I made particular enquiry respecting this point, and was informed, that two or three days after he was taken ill, one of his school-fellows gave him a push, but of which he did not complain much, and also that just before the faintness which preceded death, he had fallen over the left side of the bed, which was a very low one. As there were symptoms of the disease previous to either of these accidents, and as such accidents happen in innumerable instances without any such consequence, I believe that no one will ascribe the rupture of the blood vessels to an external cause, though this might somewhat hasten the fatal termination of the disorder. There was no external livor, or other mark of injury either on the adjacent *parietes*, or on the spleen or intestines.

It seems most probable therefore, that the rupture and consequent hæmorrhage were owing to the weak structure of the liver, which corresponded with the general weakness of this young person's frame.

* See a case related by Dr. Pearson, in the 3d Vol. of the Medical Transactions of the College of Physicians.

It would appear that it is this weakness, proceeding from a too great tenuity of the coats of the vessels, that chiefly constitutes the scrofulous habit, of which the principal symptoms seem referrible to a rupture of the smaller series of vessels either circulatory or lymphatic, and the consequent effusion either of red blood or colourless fluids, occasioning sometimes hæmorrhages, but more frequently interstitial or glandular deposits. The fine skin and silky hair observable in such habits are farther in proof of this.

We found that this affection of the liver was not the only organic derangement of the viscera in this case, for the kidney of the same side was almost entirely obliterated, and instead of it we found a strong thick white membrane in form of a bag, of an irregularly round shape when inflated. It contained a small quantity of fluid like pale-coloured urine, and some flat portions of what I took for the remains of the glandular part of the kidney adhered to it. I did not measure its capacity, but it seemed capable of containing about half a pint of water. The other kidney was larger than natural, and upon squeezing the *tubuli uriniferi*, a fluid like

like *pus* mixed with urine issued from them; but in other respects it seemed sound.

As far as my reading goes, I have not met with any morbid affection of the liver similar to that above described, or have I ever seen or heard of such a case, which has made me think that it might deserve a place in some register of facts. It has indeed been alleged, that there is not much utility in recording extraordinary and anomalous cases, as they are seldom the objects of practice. But if there is any justice in this remark, it applies rather to unusual combinations of symptoms, than to morbid appearances detected by dissection; for as the number of bodies that are inspected is comparatively small, there is reason to presume, that, in the numberless others which are not examined, there may be many among them similarly affected.

With regard to the morbid change in the kidney, I once saw a case exactly similar in an adult subject who died of phthisis pulmonalis; and it is remarkable, that in neither case was there any symptom of urinary complaint; but it may be questioned, whether the complaints of the stomach, to which this young person was subject, did

not arise from the diseased state of the kidney. I learn from Dr. Baillie's *Morbid Anatomy* *, that such changes in the kidney are not unusual, and that they are produced by the kidney being long in a previous state of abscess; and it is hardly conceivable that this could take place without considerable suffering and disturbance to the patient in some shape or other, and it is analogous to what we know of the effects of a stone in the kidney, of which, in some cases, the only symptoms are certain affections of the stomach.

It does not appear that either of these disorders admitted of a cure, but no one will, for this reason, deny the great utility of an accurate history of diseases, and the morbid appearances connected with them; for though we should not thereby be enabled to cure, we are at least better qualified to make a just prognostic, and to avoid pernicious practice, into which ignorance or error could hardly fail to betray us.

* Chap. xiii.

III. An Account of the Croup, as it appeared in the Town and Neighbourhood of Chesham, in Buckinghamshire, in the Years 1793 and 1794, by HENRY RUMSEY, Surgeon at Chesham. Communicated by Dr. CLARKE. Read July 1, 1794.

THE DISEASE, which is the subject of this Paper, was not confined to the town of Chesham, which lies in a valley, but appeared likewise upon the neighbouring hills at the distance of five or six miles from the town, and with equal violence.

The subjects were children from within the first to the fourteenth year. Authors speak of 12 years being the extent of age in which the complaint takes place, but I have met with it in a boy of thirteen, and in a girl fourteen years old,

It attacked very different constitutions. Some were of pale phlegmatic temperaments, but this was by no means the case generally; for many were fine, healthy, robust children.

The disease crept on the patient almost imperceptibly, beginning with a hoarseness
or

or wheezing, a short dry cough, and sometimes a rattling in the throat when asleep. These symptoms were at first but little attended to, owing to the general health of the child appearing good, the countenance not altered, the appetite and spirits nearly as usual, excepting at intervals. As the disease advanced, the wheezing became more observable, the cough more or less troublesome, the voice in coughing or speaking acquired a shrill sound, respiration was performed with a wheezing or sometimes croaking noise, and at length grew very distressing and laborious. At the beginning, or in slighter cases, the sound of inspiration resembled the passing of air through a piece of muslin; afterwards it was as if the noise came from a brazen tube. The cough was attended with a peculiar shrill sound, even at an early period of the disease *, as well as the voice, where there was not a perfect hoarseness †. I have heard those about the sick compare it to

* See Case 14.

† Dr. Home describes it, "Vox instar cantus galli." See *Principia Medicinæ*.

the noise which a fowl makes when caught in the hand, or having upon it the disease to which that class of animals is liable, called the croak.

This peculiarity, however, is not easily expressed by words, but a knowledge of it is readily acquired by observation. I have known the sound of the cough alone greatly shock an unfortunate parent, who had already lost one child with the complaint.

It sometimes happened, that symptoms which appeared trifling for two or three days suddenly increased, and the disease advanced so rapidly, as to prove fatal before many hours had elapsed. See Case 1.

The difficulty of breathing struck me as being different from what we usually observe, when there is an inability fully to expand the lungs; for in the croup the peculiar manner in which the patient breathed indicated an obstruction in the passage of the air to the lungs. See Case 9.

In some of the patients this symptom increased very much by paroxysms, occasioning extreme anxiety and inquietude, so that they seemed at these times to be in danger of immediate suffocation,

All

All the symptoms were worse during the night throughout the disease.

At first the cough was dry, but in the course of the disease, viz. by the third day, or sooner, the passage of the air was obstructed by viscid matter in the trachea, some of which was occasionally thrown up by cough or retching; and according to the quantity thrown up respiration was more or less relieved. Several children brought up portions of a film, or membrane of a whitish colour, resembling the coagulated matter which was found in the trachea of those children whose bodies were opened. This was thrown off by violent coughing or retching; and the efforts made to dislodge it were often so distressing, that the child appeared almost in a state of strangulation. This was succeeded by an abatement of all the symptoms, until a fresh quantity of the same substance was formed, when the distress recurred as before.

Most of the cases which occurred in November, and afterwards, were attended with inflammation and swelling of the tonsils, uvula, and velum pendulum palati, and frequently large films of a white substance
were

were formed on the tonsils. The swallowing was usually less impeded than might have been expected from the degree of disease which existed in the throat. Dr. Cullen observes, "when the internal fauces are viewed, they are sometimes without any appearance of inflammation, but frequently a redness and even a swelling appear:" (See First Lines). But much more disease in these parts accompanied the croup in many of the cases which occurred in this neighbourhood.

By the end of the second, or on the third day, symptoms of affection of the system took place, as white tongue, thirst, increased heat, and frequent pulse; and the disease advanced rapidly, not merely from violent general affection, but from the influence it had on the organs of respiration, the difficulty of breathing becoming now very distressing, the countenance being often flushed, attended with great inquietude and a continual inclination to change from place to place. The child, at the same time, eagerly put its fingers into its mouth, as if to pull away something which stuck in the passage.

The

The senses were retained throughout the disease, until the child was at the point of death, which was preceded by the red flushing of the face changing to a livid hue, and the hands at the same time acquired the same colour. The patient was cut off apparently by suffocation.

In the first Case the disease terminated fatally on the third day. None of the patients whom I have attended have died at an earlier period. Although the patient has been said to have sometimes died within twenty-four or thirty hours after the disease began, yet I have found upon closer examination, that the disease had existed longer, and that the attack had been carelessly dated from the time that severe symptoms appeared. A more speedy termination of the croup is however mentioned by some physicians, who have written on the disease. Where it has proved fatal, I have usually seen it run on to the fourth or fifth day, or even later. Where considerable portions of the membranous film, formed on the surface of the trachea, were thrown up, life was protracted still longer, in one case even to the tenth day. See Case 9.

The

The affection of the system was different in degree, and irregular in its progress. It usually increased towards night. In some of the earlier cases this wore rather an inflammatory appearance, and the skin was hot and dry. Afterwards however, this was not observable, and the skin was often relaxed and moist throughout the disease.

This morbid affection of the system in the croup appears to be symptomatic. I have not seen any danger arising merely from these symptoms, which commonly took place in a degree proportionate to the state of respiration. The danger is not to be estimated by the general state of the body; for there may be imminent danger, although hardly any symptoms of general disease have been observed. See Case 1. It is particularly necessary for those practitioners, who have seen but little of the croup, to attend to this. If they expect to meet with a considerable affection of the system, they will not be aware, that so formidable a disease has begun its progress, since for the first day or two the child has only a slight cough and hoarseness, is in good spirits, perhaps even running

ning about the room and enjoying its amusements; many instances of which I have known.

The same appearances have been found upon dissection by the different practioners, who have examined the bodies of children who have died of the croup, so that no doubt remains with regard to the seat of the disease. I had an opportunity of examining three, and found a film or membranous substance lining the cavity of the trachea: in two of them this was lying loose, but in one it adhered firmly at the lower part *.

This disease is considered as an inflammation of the phlegmonous kind by Dr. Home, the first Author who has distinguished it from other inflammatory affections of the throat, and he has called it *suffocatio stridula*. Dr. Cullen was likewise of the same opinion, and under the name *cynanche trachealis* has arranged it in the order *phlegmasiæ*, class *pyrexia*.

In all the instances in which I have had an opportunity of seeing the disease, it was

* See Case 1, 2 and 9, and Dr. Baillie's Morbid Anatomy, p. 57.

of the inflammatory kind; unless Case 12. Several of my patients had, notwithstanding, considerable spasmodic affection of the respiration, blended with the other symptoms, if sudden attacks by paroxysms be sufficient evidence of spasm. But this, I apprehend, was a symptomatic effect (although truly alarming) arising from the irritation which the inflammation excited.

Indeed spasm and inflammation are two diseases so totally different from each other, that there does not appear to me any propriety in describing under one name two diseased actions which in their nature are so distinct. That there is a disease called Croup, in which there is an increased secretion from the mucous glands of the trachea, and also a membrane-like substance formed on its surface, is sufficiently proved by the observation of different practitioners. Now if similar external marks of disease occasionally arise where there are none of these internal morbid appearances, may we not conclude, that these are two diseases which in their nature are totally distinct from each other, rather than two species (or modifications) of the same disease?

It appears to me that the Croup is an inflammation of its own kind. If it consisted in common inflammation, we might expect to find the same appearances (that is, the same kind of concretion on the surface of the trachea) every day, as its mucous membrane is so frequently the subject of inflammation attended with an increased secretion. The matter, however, of which this substance is formed, possesses different properties from those of the mucus which is thrown out upon the membrane of the nose, or of the trachea in common catarrhal affections.

I think it probable, that the film which we find in the Croup is not formed by a secretion from the mucous glands, but is an exudation from the exhalant arteries. Upon this principle we can more easily account for such film not being found in common catarrhal affections, in which the mucous glands are perhaps more the seat of the disease. It is, therefore, analogous to the inflammatory exudation in the inflammation of other internal membranes first described by the late Dr. Hunter.

The Croup has been sometimes thought infectious, but I have not been able to form a decided opinion upon this point. Some circumstances render it probable, as two and sometimes three children in the same family have been seized with it. But on the other hand, I have at different times seen two or three in a family escape, while one or two of the others have died of it, without any pains being taken to keep those who were in health from the sick. When a disease is epidemic, it is sometimes difficult to determine whether it be communicated by infection; or whether several people have the disease in consequence of their being exposed to the same exciting cause. It is rather remarkable, that although there were between twenty and thirty children in our workhouse, only one had the disease. Upon the whole, I met with above forty cases. The Croup has but rarely made its appearance in this neighbourhood. My father, who has been in considerable practice here above forty years, does not recollect seeing more than eight or ten cases.

TREATMENT.

Having annexed the history of the first eight cases, it is unnecessary to particularize here what is there related with regard to the treatment. The event of these, and of many more cases which I afterwards met with, convinced me that the adage "*si quid movendum, principio movendum,*" was in no instance more applicable than in reference to the present disease.—Yet the trifling appearance of the Croup in its early stage so rarely excited the apprehensions of parents, that I had very little opportunity of fairly trying the effect of medicine, until the disease had advanced to such an height as too frequently to baffle all our exertions. The antiphlogistic plan (particularly bleeding from near the part) if adopted at the commencement of the disease; appeared to me the mode of proceeding which afforded the most hopes of success. But when I found so much disease about the tonsils, as I have already described, bleeding from any large vein appeared to me altogether improper; and the more so when I considered the kind of
dis-

diseases which at this time we met with in the country*. In two cases, where nothing beyond slight inflammation and swelling of the tonsils accompanied the other symptoms, having been consulted pretty soon, I applied to one patient six, and to the other three leeches upon the throat, but without success. In conversation with my neighbour Mr. Suthery, an ingenious and liberal practitioner, he observed to me, that in September he lost a patient in the Croup, and desired the mother that if any of the other children should have any appearance of the same complaint they would acquaint him immediately; in a few days after, a boy in this family six years old was seized with the Croup, and Mr. Suthery was called in upon the second day of the disease: he bled the child, and prosecuted the antiphlogistic plan, but with this treatment he died.

I usually found my patient in a situation in which the only rational indication

* Ulcerous sore throats, although not very frequent, were now and then met with. In the autumn likewise, and winter, many children suffered by erysipelatous inflammation behind the ears, in the groin, in the labia of girls, or wherever the skin folded, attended with a very acrid discharge.

of cure was to promote the expectoration of that matter which was accumulating on the surface of the trachea. This I endeavoured to do by giving gum ammoniac, squills and other expectorants; or small doses of ipecacuanha; or an antimonial preparation, both in order to promote this intention, and likewise to keep up a determination to the skin: having previously given an emetic, which was repeated in the course of twenty-four hours if an opportunity offered.

A blister likewise applied either to the throat or breast was a part of the usual practice which I followed for some time; but not perceiving the least advantage from this application, after repeated trials I discontinued it.

Among other things the warm bath was made use of by many patients and repeated; sometimes fomentations to the throat and breast with emollient cataplasms were tried. And likewise, where it could be managed, the vapour of warm water was inhaled by means of Mudge's Inhaler.

The ordinary mode of treatment proving inefficacious, I thought myself justified in
step.

stepping out of the common track; and therefore gave the cicuta in several instances, but with no better effect. Where the feel of heat did not forbid, and spasmodic affection accompanied the other symptoms, I gave æther in small doses, and repeated it; but my efforts did not yet avail. Dr. Cullen says, “ although we suppose that “ a spasm of the glottis is often fatal in “ this disease, I have not found antispas- “ modic medicines of any use.”—I had, at length the satisfaction of seeing a child recover after taking the tinct. scillæ and vin. ipecacuanhæ in such doses as to excite vomiting, which were repeated every four, five, or six hours *. Indeed I found vomiting the only means of dislodging the matter which was collected in the trachea; for children are so averse to expectorate, that if they are prevailed on to take such medicines as have a tendency to produce this effect, they will endeavour as much as possible to check this evacuation.—I adopted the same practice in several instances afterwards, but could only procure tempo-

* See Case 10.

rary relief, which was in proportion to the quantity of mucus brought up.—In conversation with my brother on the subject, he mentioned that Dr. Rush had recommended calomel in the Croup. I was highly gratified with this information, and determined to try the effects of calomel the first opportunity. Yet as the Doctor recommends it to be “repeated in smaller doses every day,” it is pretty evident that the disease appeared in a milder form in Philadelphia than it has here: for before I saw the patient the disease was so far advanced, that had I confined myself to this mode of administering this medicine, there would have been no chance of repeating the doses many times.

However, I gave the calomel in what I thought the most efficacious manner, and had the satisfaction of seeing some patients recover under such treatment. I have not had sufficient experience to determine whether it is so powerful an antidote in the Croup as the author, whose practice I adopted, supposes. Having stated all the cases in which the mercurial treatment was fairly tried by me, I must refer

refer the reader to them, and leave him to draw his own conclusions.

C A S E S.

The first eight Cases occurred between the beginning of March and the end of September, 1793.

CASE 1.

A GIRL, about four years old, was taken, March 9, 1793, with a wheezing and very slight cough; her constitution in every other respect being healthy. March 12, I accidentally saw her, and, being struck with the manner in which she breathed, I noticed this circumstance to the mother, who said that the child was pretty well in health, but had had a very slight cough, and had breathed with this kind of difficulty for two or three days, and now and then, during this period, had had an inclination to retch. From the difficult respiration, and peculiar shrill sound of the voice, I judged that the child was labouring under the suffocatio stridula, or Croup, and recommended an emetic,

emetic, which was given in the evening. The child passed the day without any appearance of general disease; and after taking the emetic, she seemed to be somewhat relieved in her breathing. No material alteration took place until between five and six o'clock in the morning, when the respiration became very laborious, and in about three hours the child died. A blister was laid upon the breast, but we had not time to administer any internal medicines.

The next day I opened the body. No morbid appearance was observable in the cavity of the thorax, or in any of its viscera. I then laid bare the trachea, and opened it longitudinally from the glottis to its bifurcation, and here the effects of disease were sufficiently obvious, and such as enabled us at once to account for the child's death. About two inches of the upper part of the cavity of the trachea was lined with a membrane which in appearance very much resembled the buff on the surface of the blood drawn from patients in pleurisy, and other inflammatory complaints. This was evidently the coagulated lymph which had been thrown out, and coagulated on the surface

surface of the mucous membrane. The lower part of this cavity was covered with a purulent mucus in considerable quantity, which appearance likewise was traced to the beginning of the ramifications. The mucus and film being removed, the mucous membrane shewed marks of slight inflammation.

It is evident that this child died from suffocation, the passage of the air to the blood being obstructed by the film and mucus which covered the internal surface of the trachea. But it is worthy of notice, that, as long as the lungs were tolerably supplied with air, no general affection of the system was excited, for the child appeared chearful even to the last day.

CASE 2.

To this child I was called June 13, 8 A. M. This was a fine beautiful boy, three years old, who had not had the measles*.

* The measles having been very general in this place at the beginning of the summer, induced me to notice this circumstance in this and some of the subsequent cases.

I found

I found him labouring hard for breath, a great wheezing, or rather croaking sound, attending respiration; he had some cough, and a shrillness of voice upon speaking or coughing; his countenance was flushed, pulse frequent, skin rather hot and moist. The mother informed me that a trifling cough, with hoarseness, had been coming on two or three days; that she observed a difficulty of breathing all yesterday, which increased towards night; the appetite had been more considerable than usual until last night, when a little sickness came on, and the difficulty of breathing afterwards increased. During the early part of the night the child slept, but about four o'clock in the morning the breathing became very laborious, and continued growing worse until the time when I saw him. I immediately laid a blister across the throat, and ordered a tea-spoonful of the oxymel scillæ and vinum ipecacuanhæ to be given often, with a view to dislodge some of the viscid phlegm which impeded respiration.

In four hours after I saw the child again, the disease had made a rapid progress, only two tea-spoonfuls of the medicine had been
 swal-

swallowed, and but little else. The countenance was much altered, the red flushing was changed to a darkish or livid hue, the eye-lids half closed, unless when roused; respiration very laborious, pulse weaker and smaller; and the whole appearance was such as indicated a quickly approaching death, which took place in a few hours after.

The next day I obtained permission to open the body. Neither the cavities of the thorax shewed marks of disease, nor the substance of the lungs. The pericardium contained an ounce of water, but there was no morbid appearance in the membrane. I laid open the trachea, which contained a great deal of a whitish viscid mucus. Towards the upper part of this canal there were some portions of the film, but in less quantity than in the former case. Upon examining the trachea down to its ramifications, a considerable quantity of the same viscid mucus, or phlegm, was observed. When the membrane was cleared, some vestiges of inflammation were seen, particularly at the upper part of the trachea, for as we traced it downwards, this appearance was less perceptible.

ceptible. Indeed in neither of these two cases was there so much inflammation observable in the trachea, as might have been expected from the effects of the disease.

CASES 3 and 4.

The next two patients were in one family, one of whom was three years old, and the other fifteen months. They were healthy children, and perfectly recovered from the measles. They both died nearly at the same time, within twenty-four hours from my first visit: the eldest on the fourth, and the youngest on the third day. As soon as I saw them, I laid a blister across the throat in each, but could only get down a small quantity of the oxymel scillæ. They sank so fast as to be incapable of swallowing any thing in a few hours after I left them.

CASE 5.

About a fortnight after the above two children died, another child in the same family was attacked with the same disease. This was a boy four years old. I was applied to about the beginning of the second day of the disease, and although the symptoms

toms were slight, the disease was sufficiently characterized. I applied three leeches on the throat, and gave him at two doses oxym. scil. $\mathfrak{z}$ i. at the distance of half an hour between them. This producing no sensible effect, the following* was prescribed.

R. Vin. ipecac. acet. scillit. aa $\mathfrak{z}$ ij. syr. simp. $\mathfrak{z}$ i.
aq. puræ $\mathfrak{z}$ ij. M. Detur coch. larg. omni hora.

The next day I found him better; he had taken several doses of the mixture without any other effect than occasioning two or three stools. Only a trifling cough remained; the peculiar wheezing, which had been particularly observable when he was asleep, had been much less the last night than the preceding, and he had rested tolerably well. When I called the following day, there were no marks of disease remaining.

* I was not at this time aware that acids counteracted the emetic quality of ipecac.—See Woodville's Medic. Botany, p. 563. and Dr. Irving's Dissertation which obtained the prize medal of the Harveian Society of Edinburgh, for 1784.

CASE 6.

Two more cases occurred in July. One was a fine lusty boy, in his sixth year, not well recovered from the measles, which he had had six weeks before. I was called to this patient early on the third day of the disease. I took from the arm upwards of four ounces of blood, and vomited him with *vin. ipecac.* and *oxymel scillæ*; afterwards gave small doses of *ipecacuanha*, to be repeated every two hours; recommended likewise the warm bath, and the steam of warm water to be drawn into the lungs; a blister was also applied across the throat. The next day I found him growing worse, his breathing was very laborious, particularly by paroxysms. He had been put into the bath once, but could not be prevailed upon to use it a second time; nor would he make use of the inhaler. I now gave him half a grain of the *digitalis* every hour, of which he took four doses without any effect. The disease continuing to gain ground, he died the following evening.

CASE 7.

The other case, which I met with in the month of July, was a boy three years old, of a similar constitution to the former, but he had been more weakened by the measles. I laid a blister across the throat on the third day, vomited him, and afterwards gave small doses of ipecacuanha in saline mixture, but without any benefit. He died on the 5th day.

CASE 8.

September 6, I was called to another patient labouring under the same disease. This was a lusty girl, in her fourth year. I found her breathing with considerable difficulty, and with a croaking noise. She had a troublesome cough, and hoarseness when coughing or speaking, and slight febrile symptoms. Ulcerated sore throats being at this time somewhat prevalent, induced me to inspect the fauces, and I observed a swelling and no inconsiderable ulcer on the left tonsil, although the child had not discovered any pain or difficulty in swallowing. The mother informed me, that the girl had been ill

four or five days ; her complaint began with a slight hoarseness and cough, but her general health not being altered, this was considered only as a common cold. These appearances however gradually increased, the breathing became more affected, which was particularly observable during sleep ; and within the last two days she lost her appetite and spirits, and was very little upon her feet.

We gave her an emetic, and after the operation she got a little sleep, having apparently obtained for a short time some relief. But no other medicine could be got down, and scarcely any thing else. Respiration became more and more laborious, and she died within twenty hours after my first visit.

CASE 9.

A girl, four years old, on November 10, (being the third day of the disease) brought up a considerable portion of membrane by violent coughing and retching. Here were considerable floughs on the tonsils. From this time to November 15, four more large pieces of membrane were brought up, each by a very

a very distressing exertion, as if she was almost strangling, but succeeded by a diminution of the wheezing and difficult respiration for a few hours, until a fresh quantity began to accumulate, when the symptoms returned as before. After an emetic the cicuta was given, but on the tenth day of the disease she died.

The day after she died I opened the body, and found adhesions in both cavities of the thorax, but no marks of recent inflammation either on the pleura, or in the substance of the lungs, so that these adhesions were the effect of a former disease. Upon laying open the trachea longitudinally, we found a membrane of a whitish colour, which formed a lining to this canal, exactly similar to those portions which the child threw up during life. This lay loose at the upper part of the trachea, and was less firm in its texture there than at the lower part, where it adhered very closely, so that as we traced it some way into the ramifications, we were obliged to peel it off. Having removed this substance, there were manifest marks of inflammation on the surface of the trachea.

CASE 10.

This is the case alluded to page 39. A girl four years old began with taking tinct. scillæ and vin. ipec. about half a drachm of each at a dose, which excited vomiting, by which a good deal of viscid phlegm was brought up, and with it some mucus of a whitish appearance; and of a thicker consistence than the other, looking like coagulated lymph beginning to coagulate, which, by the kind of exertion which brought it up (for she coughed with the vomiting) must have come from the trachea. The medicine was repeated every four, five, or six hours, and gently purged her. She was sensibly relieved after every dose of the medicine. As the complaint gave way, we allowed longer intervals between the doses, till at length it was given only once a day. The peculiar sound of the cough did not go off entirely before the seventh or eighth day, by which time she was free from disease.

CASE 11.

A strong lusty boy, five years old, was taken with the Croup November 27, in the evening.

evening. I saw him at the end of forty-eight hours, his respiration was then very difficult, and attended with a croaking sound, and he had quite the croupy cough. Small floughs were to be seen on the tonsils, but he swallowed pretty well. I vomited him with vin. ipecac. and tinct. scillæ; and wished to repeat it every five hours.

November 30.—His breathing very difficult, cough the same, pulse frequent, skin moist, heat moderate, countenance shewed no marks of disease. He had only taken a second dose of the medicine, which excited no vomiting.

December 1.—Breathing so excessively bad, that every inspiration occasioned a deep hollowness at the pit of the stomach, and he seemed as if he must be suffocated. His tongue white, but I could not examine his throat. Other appearances as before.

2d. and 3d.—Breathing still very bad, but occasionally mitigated by the phlegm which he brought up, and with which small portions of film were intermixed. We could seldom see the kind or quantity of expectorated matter, for generally as soon as he got it into his mouth he swallowed it. There

was sometimes more heat than natural, and a frequent pulse, but upon the whole, no degree of fever to excite apprehension. As no internal medicine could be administered, we used external applications. A large plaister of gum ammoniac, dissolved in acet. scillæ, was laid on the breast, but neither this nor any cataplasm was suffered to lie on quietly, so as to afford any good reason to expect benefit.

4th.—Symptoms diminishing, cough more loose, and from his manner of coughing he seemed to raise a good deal of phlegm, which he swallowed as soon as it came into his mouth.

The complaint gradually subsided, and by the 8th his breathing was free and easy, and he had but little cough, which founded as a common cough.

CASE 12.

December 21.—I was sent for at ten o'clock at night to see a child two years and a half old, in a family where a child a few weeks before had died of the Croup. This little patient had been weakly some months ago, but of late had been in better health,

health. I found him breathing with a stuffing; he coughed a little, and when either coughing or crying, the croupy sound was observable. The mother said that when she put him to bed early in the evening, she did not observe any symptom of this kind upon him, but after he had been in bed about two hours, according to her custom, she went to take him out of bed, and found him in this situation.—He drivelled at his mouth, and said something was in his throat. I could not examine his throat, but he swallowed some butter and sugar which was given him with apparent ease. He had no fever.

R. Calomel gr. iij. pulv. tragac. c. ʒss. divid. in doses
tres equales. Sumat i 4ta quaq. hora.

I found him next morning free from complaint. His mother informed me that he was relieved after taking the first powder, but the wheezing began to encrease about the time of taking the second; after which it went off, and did not again return. The third dose however was given.—No other sensible effect was produced than a gentle purging.

CASE 13.

January 4, 1794.—I saw a lusty boy, nearly a year old, at the breast, with the Croup, which came on early in the morning of the day before. The croaking sound was so great before the child had been ill thirty hours, that it might be heard at some yards distance from the house. After an emetic, we gave half a grain of calomel every two or three hours. The next day he was better, but had passed a restless night. Cough began to be loose. Having taken four doses of the calomel, he was gently purged. The medicine was continued, but not so frequently.

January 6.—Passed a restless night; had several stools; slight febrile symptoms; has continued the whole time to suck, though often with difficulty. From the manner of his coughing and breathing there seemed to be a good deal of phlegm in the passages, which induced me to give an emetic, and afterwards the calomel, as before.

7th. He was relieved by the emetic, which he took yesterday evening, but at night he grew worse, and for three or four hours

hours he breathed exceedingly bad ; towards morning he grew better.—Calomel continued.

8th.—Breathing being rather more obstructed, we gave another emetic. From this time he continued getting better, but the croupy sound was perceptible to the 11th, now and then. Afterwards I saw no more of him.—By January 9, twelve grains of calomel were taken ; after which he took the same dose three times a day for two or three days.

CASE 14.

1794, January 10.—A fine child at the breast, thirteen months old (brother to the patient, Case 11.) was taken the evening before with hoarseness and wheezing, which continued through the night, but in the morning he grew better. The following evening (the 10th) the symptoms again increased, and when I saw him the appearances of Croup were unequivocal. I

Note. The sudden increase of the symptoms on the 7th, for four hours, had a good deal of appearance of spasm, but this was symptomatic.

ordered

ordered an emetic, and afterwards a grain of calomel every four hours.

11th.—He had not taken any of the medicines, but after I left him he was sick, and brought up a good deal of phlegm. In the course of the night the symptoms subsided, and nothing remained but trifling hoarseness.

CASE 15.

A boy of a slender form, but healthy, was taken with symptoms of Croup on January 16.—His general health was unaffected till the 20th, when a listlessness and failure of appetite began to appear. At night the croupy sound of the cough increased, with wheezing. I now saw him the first time. An emetic having been taken the night before, the mercurial treatment was adopted.

R. Calomel gr. x. cretæ ppt. gr. x. M. & divid. in partes equales quatuor. Sumat unam 4ta quaq. hora.

At the same time I ordered a drachm and a half of strong mercurial ointment to be rubbed into his thighs. If a purging should come on, I desired that a tea-spoonful of syr. pap. alb. should be given with a powder.

21st.—After I left him at night, his breathing became very bad, and with considerable straining he brought up a film, by which he was relieved. He coughed but little through the night, and got some sleep. —Towards evening the wheezing increased; cough more frequent, but loose, attended with the croupy sound as before; he has had but little appetite, his pulse is rather frequent, but is not confined to his bed. A tea-spoonful of the syrup was given, as he had had several stools.—Powders continued, and more ointment rubbed in to-night.

22d.—He slept last night, breathes easy, cough loose, not frequent, and has less of the croupy sound; countenance wan, but takes a little food, and often runs about the house. Bowels lax, Calomel, and mercurial friction continued.

23d.—He is much worse, not from the croupy symptoms being increased, for these are diminished, but sickness and purging are come on, with total loss of appetite, and great languor, weak and frequent pulse.—These symptoms I supposed were the effect of the mercury, he having taken upon the whole forty grains of calomel; and two
of

or three drachms of mercurial ointment having been rubbed in, allowing for what might be wasted by the person's hand who applied it.—I therefore laid aside the mercurial ointment and the calomel, gave him some aromatic confection, and ordered him frequently some cordial nutriment.

24th.—I found him in all respects better. The croupy symptoms were entirely gone off, he had only a little cough remaining, which had nothing peculiar in its sound. His stomach and bowels were easy, countenance better, he was chearful, and his appetite began to return. From this time nothing more was done, and he recovered.

CASE 16.

Just as the child whose case I have mentioned above got well, an infant in the same family, at the breast, (fourteen months old) was attacked with the Croup.—After an emetic, at the end of the second day, a grain of calomel was given every four hours, and some mercurial ointment was rubbed in.—By the fifth day, the use of the mercury was left off, as the croupy symptoms had disappeared. Upon the whole, fourteen grains of calomel were given, and nearly two

two drachms of the strong mercurial ointment used in friction.

CASE 17.

January 27.—I saw a child at the breast, a year old (four miles from Chesham) feverishly afflicted with the Croup, which, I was informed, came on the day before. I proposed an emetic, and afterwards the mercurial plan.

28th.—I was prevented seeing him to-day, being detained by a case of midwifery.

29th.—From the state in which I left the child, I expected to find him either dying, or dead; but I found him much better, the difficulty of breathing subsided, the cough had hardly any of the croupy sound, was loose, and but little troublesome. They had only given two grains of calomel, and none of the emetic*.

30th.—No croupy symptoms remained, and from this time the cough soon wore away.

I was called to two or three patients after-

* Mr. Suthery mentioned to me a child who recovered with the use of calomel, in which a slight salivation was excited.

wards in the Croup, but could not make a proper trial of mercury, as the disease was so far advanced that they died within twelve hours after my seeing them.

I have here given a faithful history of the Croup as it fell within my own experience, with an account of the remedies which I have made use of. More extensive experience than I have yet had is requisite to determine, whether in mercury we shall find a certain remedy for the disease. With regard to the above cases it should be observed, that some recovered when mercury was not administered, or in such quantity as not to produce any effect; and in two patients under the care of my brother, it was given unsuccessfully. Moreover the disease was less severe towards the end of the epidemic constitution, which was the period when we adopted this plan; so that admitting that all those patients who recovered under such treatment were *cured by mercury*, it does not follow that the same effects would have been produced had it been given in the early cases; yet it surely merits farther trial, the ordinary mode of treatment being so unsuccessful.

IV. *The Case of a Young Woman who poisoned herself in the first Month of her Pregnancy, by THOMAS OGLE, Surgeon, Great Russel-street, Bloomsbury. To which is added, an Account of the Appearances after Death, by the late JOHN HUNTER. Communicated to the Society by EVERARD HOME. Read August 5, 1794.*

MARY HUNT, servant to a gentleman in Charlotte-street, Bedford-square, twenty-five years of age, had for some time shewn a partiality for one of the footmen in the same family. She became all at once exceedingly dejected, which was supposed to proceed from his neglecting her; and on Thursday, the 19th of April, at twelve o'clock at night, took half an ounce of white arsenic, and immediately afterwards drank a quart of wine; about one o'clock she had so much pain in her stomach as to be obliged to call for assistance.

The symptoms were excruciating pain in the stomach, sickness, vomiting, excessive thirst, and a small tremulous pulse; these were followed by pain in the bowels, and several purging stools.

She

She drank brandy and water, wine and water, and several quarts of plain water to relieve the thirst, and ease the pain. Some hours after taking the arsenic she became easier, expressed a desire to be left alone, being inclined to sleep, and remained several hours in a dozing or comatose state, from which she did not recover, and died about one o'clock on Friday, thirteen hours after taking the arsenic.

Upon inspecting the body after death there were found the following appearances.

In the cavity of the abdomen there was an appearance of the effects of slight inflammation on the peritoneal coat of the small intestines.

The stomach contained a greenish fluid with a curdy substance in it, in all amounting to about twelve ounces. On the internal surface of the great curvature near the cardia a portion of the villous coat about the size of a crown-piece was partly destroyed, and of a dark red colour, with a regularly defined edge, and some of the arsenic adhering to different parts of its surface. The rest of the stomach was in a natural state. This appearance in the

the stomach was an effect produced by the arsenic.

The uterus was a little enlarged, and had the vessels unusually loaded with red blood.

There was an uncommon quantity of blood in the vessels of the ovaria and fallopian tubes, but principally in those of the ovarium and morfus diaboli of the left side.

The organs of generation being carefully removed, and both ovaria being slit open, there was found in the left a corpus luteum.

It was evident, from this circumstance, that conception had taken place, which led to an enquiry respecting the last appearance of her menses, which appeared by the evidence of the family to have been little more than a month before her death.

With the dread upon her mind of being with child, the usual period of menstruation had hardly elapsed, without its appearing, which confirmed her suspicions, before she, in a fit of despair, put an end to her life.

From this evidence, the period of conception could not exceed a month, and probably was much within that time.

As it was interesting to have the parts

accurately examined, to see what information might be acquired respecting the foetus at so early a period; they were given to Mr. Hunter for that purpose, whose observations upon them are contained in the following account:

The arteries of the uterus were injected, and the smaller vessels were filled to so great a degree of minuteness, that the whole surface became extremely red.

The cervix uteri, and os tincae were of their natural size; but the body, or that portion of the uterus next the fundus was a little enlarged, and more prominent externally in the middle. The spermatic vessels were also enlarged.

On cutting into the substance of the uterus, it had more of a laminated structure than in the unimpregnated state: this appearance of lamellæ appeared upon examination to be formed by veins somewhat enlarged, compressed and transversely divided. The uterus was unusually soft in texture, and terminated on the internal surface in a pulpy substance.

The blood vessels of the uterus passed into, and ramified upon this pulpy substance,

stance, which was continued across at the cervix uteri, so as to make the cavity of the uterus a circumscribed bag; and at this part, the pulpy substance was so thin, as to resemble the retina.

This cavity had a smooth but irregular internal surface, and the pulpy substance upon which it was formed, was evidently blood coagulated and varied in its thickness in different parts. Upon a longitudinal section of the uterus, the posterior part of the coagulum, which was the thickest, was nearly half an inch; where it terminated towards the cervix it was pendulous and unattached. There were also several loose processes, all turned towards the cervix, one of them very thin, as broad as a silver penny, and only attached by one edge to the fundus near the opening of the right fallopian tube.

On flitting open the fallopian tubes, the coagulum was found to pass some way into them, and to extend more than half an inch on the left side which had the corpus luteum. The coagulum was thickest at the orifice of the tube, and there adhered to the inner surface for the eighth part.

of an inch; beyond which, it became smaller and terminated in a point. In the left tube the coagulum was in two places coiled or folded upon itself, as if thrown back by the action of the tube. The portions of the coagulum at the orifices of the tubes were hollow.

When the inner surface of the cavity of the uterus was examined with a magnifying glass, it was found extremely vascular, and dotted with innumerable whitish spots too small to be seen by the naked eye.

In the examination of this uterus, and fallopian tubes, as Mr. Hunter's chief object was the detection of the embryo, no precaution was omitted which could be devised, to prevent it from being overlooked or destroyed.

The uterus was opened in a basin of clear water, the incision was conducted with great circumspection, and very slowly continued till the whole of the cavity was exposed. Every part of the internal surface was minutely examined with magnifying glasses, but, in no situation, was there any thing resembling an embryo to be found.

The

The presence of a corpus luteum, the enlargement of the uterus, the newly formed vascular membrane, or decidua, lining the cavity, and the history of the case sufficiently prove conception to have taken place; and the embryo being no where detected by an examination so accurate, and conducted by an anatomist so skilful in minute investigation, would induce a belief that the foetus had not been sufficiently advanced to take on a regular form.

The appearances in the uterus, here described, the late Dr. Hunter in his lectures mentioned to have seen at a very early period after impregnation: so far they are not intirely new. The accuracy of the examination renders this case valuable, as it seems to enable us to decide a point hitherto not at all understood—That certain changes in the uterus not only take place previous to the reception of the foetus, but that the foetus does not acquire a visible form for some time after these changes have been made.

V. *An Account of a Case of Diabetes, with an Examination of the Appearances after Death.* By M. BAILLIE, M.D. F.R.S. &c. Read February 3, 1795.

JAMES NEALE, a man about twenty-four years of age, was admitted a patient under my care into St. George's Hospital, on the 11th of June, 1794, affected with Diabetes. The beginning of this disease is extremely difficult to ascertain, because it has almost always made considerable progress before it has attracted attention. In the present case the person was very much emaciated, and therefore the disease had existed a sufficient length of time to have affected very powerfully the constitution.

His general health, before the coming on of this disease, had been good, and he had not been given to intemperance. He complained of extreme thirst, with a voracious appetite, and passed about ten pints of urine at an average in twenty-four hours. The urine was of a yellowish green colour, with some degree of turbidness; was free from any urinous smell, and had a strong sweet-

ness

ness to the taste. A large portion of saccharine matter, in which there were some imperfect crystals, was procured from it in several trials by evaporation.

The patient had a considerable degree of general affection of the system attending this complaint, the skin being dry, with some heat, and the pulse being accelerated beyond the natural standard. It was generally about 90, and not unfrequently it rose above 100.

Occasionally he was much flushed in the face, and had a considerable propensity to sweating.

He had a severe purging, which continued with more or less violence between three and four weeks, but this seemed to produce no change whatever on the Diabetes. As diarrhoeas were epidemic at this time, there was no reason to suppose that there was any connection between the one disease and the other. At length, after a trial of a considerable variety of medicines, without any visible advantage, he was seized on the 7th of November with a fore throat and violent erysipelas of the face, which carried him off in four days.

The first medicine which was ordered was decoction of bark, with diluted vitriolic acid, and some alum whey in the evening. This was continued for about ten days, without any apparent advantage.

A trial was next made of a powder, consisting of three parts of soda phosphorata, and one of ferrum vitriolatum. The dose of the powder was a scruple, and it was ordered to be given every four hours. This plan was continued between two and three weeks. Occasionally, for a day or two, the urine was considerably diminished in its quantity, but it would return again to its usual standard; it was never altered in its quality of sweetness as far as I could observe. The variety in the quantity of the urine I had no reason to believe depended upon the medicine, because the quantity varied in the trial of other medicines, some of which were not given with the view of stopping the Diabetes. I was led to order this medicine, not from any conjecture formed about the nature of the disease, but merely because I had heard that it had once been successfully employed in a similar case,

The

The patient was next ordered to take extract of cicuta, which has been said to have been serviceable in Diabetes. He did not take more than a scruple in twenty-four hours, as his head, even with this small dose, was much affected with giddiness. The cicuta was continued to be given about three weeks, and during this time there was some variety in the quantity of urine, but upon the whole no real advantage was gained.

Mercury was then ordered, and the strong mercurial ointment was rubbed in every night in a considerable quantity. Two drachms were frequently rubbed in at once, and calomel was also given in pretty large doses by the mouth. The trial of this medicine continued for six weeks. Salivation could never be excited, and the mouth was only made a little tender. No permanent change was produced on the quantity of urine during the use of the mercury, but it was subject to some variety as in the other trials. The patient seemed however to recover a little from his emaciation. A large blister was also applied to the loins, and

and kept open for a short time, but the disease was not affected by it.

Shocks of electricity were sent for several days through the loins, but without producing any change on the Diabetes. The erysipelas, of which he died, coming on during the trial of the electricity, it was not continued long enough to form a proper judgment of its effects.

I was led to the trial of mercury and electricity, not from any plausible conjecture about the probability of their success, but merely because they are known to have a powerful influence on the body, and no medicines, which had been commonly employed in this disease, had been of real advantage.

While the patient had the diarrhoea, opiates were frequently given in small doses, but these produced no change on the Diabetes*.

* The reader will be pleased to recollect, that this case occurred, and the present account of it was written, long before the valuable publication of Dr. ROLLO upon Diabetes appeared, in which a mode of practice has been recommended, that has been attended with much more success than any hitherto adopted.

After

After his death, I took a very early opportunity of examining the body.

Kidneys.—Both kidneys were of the ordinary size and shape. When the proper capsule was removed from each, the veins upon the surface were much fuller of blood than usual, putting on an arborescent appearance. When the substance of both kidneys was cut into, it was observed to be every where much more crowded with blood-vessels than in a natural state, so as in some parts to approach to the appearance of inflammation. Both kidneys had the same degree of firmness to the touch as when healthy, but I think were hardly so firm as kidneys usually are the vessels of which are so much filled with blood. It is difficult however to speak very accurately about nice differences in degrees of sensation, unless they can be brought into immediate comparison.

A very small quantity of a whitish fluid, a good deal resembling pus, was squeezed out from one or two infundibula in both kidneys, but there was no appearance of ulceration in either. Upon first tasting the fluid, I thought it had some degree of sweetness, but upon a repetition I was doubtful.

The

The artery and vein passing into the cavity of each kidney presented exactly the natural appearance. After separating a good deal the cellular membrane which joins together the blood-vessels, I discovered a lymphatic passing from one of the kidneys. This was of the usual size, had the common valvular appearance, and was empty. There were doubtless several others belonging to both kidneys, but these were so small as not to be distinguishable, a circumstance which is very common in the lymphatics of the kidneys.

The nerves of the kidneys were of the usual size, and the ureters of both were perfectly natural.—The renal capsules appeared quite healthy.

There was also no diseased appearance in the urinary bladder. Its inner membrane was more crowded than usual with small blood-vessels, but this is not uncommon in all states of the body. I could perceive no lymphatic vessels at the neck of the bladder, but these are generally of so minute a size as to be discoverable with great difficulty.

Stomach and Intestines.—In cutting into the stomach, some quantity of a green pulpy matter

matter was found, and there was also the same kind of matter in the duodenum. The matter in the upper part of the jejunum was of the same sort, but much more fluid. The structure of the stomach was quite sound. In some parts of its inner membrane there were little red spots produced by an accumulation of very fine blood-vessels: but this appearance is extremely common in other cases. There was a greater determination of blood than usual to the whole track of the small intestines, but their structure was every where sound. The great intestines had no particular determination of blood to them, but were distended with air.

The mesenteric glands were all healthy except one or two, which contained a good deal of an earthy matter; no lacteal vessels were any where visible.

Liver.—The liver was somewhat of a smaller size than usual, but its structure was perfectly natural. The gall-bladder was flaccid, and contained a small quantity of green bile. The biliary ducts were quite sound.

The spleen was a little softer than usual, but this change in it is very common upon
other

other occasions: Its coats at one part were converted into a soft cartilage.

The pancreas was quite healthy in its structure.

After giving this account of the appearances upon dissection, it may perhaps not be improper to take a short view of the principal theories which have been formed about the cause of this disease, and see how far the appearances tend to support or invalidate them.

It was the opinion of Dr. Mead, and his authority made it at one time pretty generally received, that Diabetes depended on a morbid state of the liver and bile. He was led to this idea from having found in the livers of persons who had been afflicted with Diabetes, what he has called steatomatous collections. That the liver may be diseased where there is Diabetes, will readily be granted, but that a diseased state of the liver is necessary in order to produce Diabetes, is certainly without foundation. The liver, in the case which we have related, was perfectly sound, and the bile had no uncommon appearance. In other cases of Diabetes, the liver has generally been found,

upon examination, to be in a healthy state. In those cases of Diabetes, therefore, where the liver has been discovered to have been diseased, it should be considered as an accidental concurrence, and not that there had been any necessary connection between the one disease and the other.

It was the opinion of the late celebrated Dr. Cullen, and the same idea was afterwards prosecuted with more minuteness by Dr. Dobson*, that Diabetes depended on the chyle not being assimilated into the nature of blood, but that circulating in the blood vessels as chyle, it was strained off by the kidneys in the form of sweet urine. It is evident that this opinion is founded upon the supposition that chyle contains so large a proportion of saccharine matter, as to be capable of communicating a sweet taste to the urine when mixed with it. In two dogs which were killed on purpose for making this experiment, I tasted the chyle. In the chyle of the one I was not sensible of any sweetish taste. The chyle of the other seemed to me to be sweetish, but this taste

* See Medical Observations, Vol. V.

was so very slight, that when a part of the chyle was mixed with an equal proportion of water, the mixture was perfectly insipid. It would therefore have been still less capable of communicating a sweet taste to the same proportion of the urine *. The chyle in man cannot be supposed to differ from that in a dog, as digestion is precisely the same kind of process in both species of animals; it is therefore evident, that the sweetness of the urine in diabetic patients cannot arise from a mixture of chyle not assimilated into the nature of blood, and being strained off by the kidneys along with the urine.

Dr. Dobson has mentioned, as a proof of the truth of his opinion, that the serum of the blood, taken from the arm of a diabetic person, had some degree of sweetness to the

* These two dogs were fed upon animal food. About the time of this Volume of the Medical and Chirurgical Transactions being sent to the Press, I tasted the chyle of a dog which had been fed upon bread with butter very thinly spread upon it. The chyle seemed to me to be a little sweeter than in one of the former experiments where the dog was fed upon meat; but if this chyle had been mixed with an equal proportion of serum, or of urine, it would not have imparted the slightest degree of sweet taste to them. The force of the present argument, therefore, I do not consider as being in the least affected by this last experiment.

taste.

taste. The serum of the blood, however, taken from other diabetic patients, has not only been found not to be sweet, but even to have the saltish taste of common serum; and whatever may have produced the sweet taste of the serum in the case related by Dr. Dobson, it is obvious that it could not arise from the mere mixture of unassimilated chyle.

It appears, further, to be a strong argument against the truth of the opinion entertained by Dr. Dobson, that in cases where the urine in Diabetes has been found to be very sweet, the serum has retained its usual saltish taste. If the sweetness of the urine really arose from the mixture of unassimilated chyle strained off along with the superfluous water of the blood by the kidneys, one would naturally be led to believe, that in cases where the urine was very sweet, a sweetish taste should also be perceptible in the serum, from which, according to this theory, it may be said to be derived. In very slight cases it might be allowed, that a sweetish taste may be perceptible in the urine, and not in the serum, on account of its greater

mas; but in all strong cases, this supposition cannot, I think, be conceded:

It has been supposed, by a late very ingenious author*, that Diabetes is produced in consequence of chyle passing by a retrograde motion of the absorbent vessels from the lacteals into the lymphatics of the kidneys or the bladder. This opinion proceeds, like the former, upon the idea that chyle contains so much saccharine matter as to be capable of communicating a sweet taste to the urine when mixed with it, which we have already shewn to be ill founded. If it be said that the chyle in diabetic patients is much sweeter than that of persons in health, it seems to me that there can be no satisfactory evidence of the truth of this opinion, except what arises from an examination of the chyle itself. Besides, no decisive proof has been given of the retrograde action of the absorbent vessels, and this idea is so contrary to the contrivances in their structure and their obvious mode of action, that it should not be admitted but upon the most unequivocal evidence.

* See Darwin's Zoonomia, from p. 311 to p. 322.

The œsophagus, the stomach, and the intestinal canal, which are capable of an antiperistaltic motion, have been brought into comparison with the absorbent vessels, as being similar to them in structure, and an argument in favour of the retrograde action of the absorbents has been founded upon this analogy. These parts bear however but a very remote analogy to each other, either in structure or in use, and therefore an argument built upon this analogy would seem to be inconclusive. The veins bear a closer analogy to the absorbents in their structure, and there are no diseases, as far as I know, which demonstrate in the veins a retrograde mode of action.

It may be considered as a strong argument against a retrograde action of the absorbents, when applied to explain the phenomena of Diabetes, that no anastomosis has been demonstrated in the human body between the lacteal vessels and the lymphatics of the kidneys or bladder, and that it is not likely such an anastomosis between them commonly takes place. What varieties may exist in particular individuals it is impossible

to say, but there is sufficient ground for believing that such an anastomosis makes no part of the general structure. The route of the blood vessels and lymphatics is very much the same in most of the internal parts of the body, and no anastomosis takes place between the blood vessels of the kidneys or bladder, and the blood vessels of the small intestines. From analogy, therefore, we should be led to believe, that there was no anastomosis between the lacteals and the lymphatics of these parts.

If this anastomosis really took place, and the opinion about the route of the chyle above stated was well founded, one would expect the anastomosis to be particularly observable in a person who had been long affected with Diabetes. The lacteals and the lymphatics of the urinary organs would probably be more conspicuous than in common cases, and therefore their junctions with each other be more readily detected. In the case of the diabetic patient, of which we have given an account, the lacteals were so small as not to be visible, one lymphatic could only be discovered belonging to one
of

of the kidneys, and the lymphatics at the neck of the bladder were not to be observed.

Neither is there any reason to believe that there must be a communication between the lacteals and the lymphatics of the bladder or kidneys, accompanied with a retrograde action of their coats, because urine is so soon voided after a considerable quantity of any aqueous fluid has been drank. The absorbent vessels of the stomach and intestines can convey their contents at a very quick rate to the thoracic duct. I recollect to have seen some lacteal vessels empty themselves almost instantaneously when looking upon the mesentery of a dog, which had been killed a few hours after taking food; and some experiments, made lately upon the stomachs of living animals, shew that watery fluids can be taken up by the absorbents of the stomach in a very short time, and carried into the thoracic duct*.

* These experiments were made upon a goat and a dog, by Mr. Carlisle, one of the surgeons of the Westminster Hospital. Above a pint of water was taken up from the stomach in less than twenty minutes, and the absorbents at the small curvature of the stomach were observed to be turgid with a transparent fluid like water, and were passing in the direction of the diaphragm towards the thoracic duct.

Were the rate of absorption from the stomach and the intestines even much less than it is known to be, I should be more apt to believe that the quick evacuation of urine, after a person has drank a considerable quantity of aqueous fluids, was owing to a sympathy between this state of the stomach and the kidneys, than to a retrograde action of the absorbent vessels. There is a general communication of strength to the system when the stomach has received plenty of food after much fasting, long before the food can have been converted into chyle, and carried into the general circulation. This must depend upon a sympathy between the stomach when it has recently received food, and the general system. In the same manner we may suppose, that when a considerable quantity of aqueous fluids has been drank, the kidneys sympathize with this state of the stomach, and are excited to a more vigorous secretion. There appears to me however to be no need for this supposition, as the rate of absorption is so great that water may get from the
 stomach

stomach into the circulation in a few minutes*.

It has been supposed by others, that Diabetes depends on the tubuli uriniferi of the kidneys being relaxed or enlarged, and that the chyle escapes with the urine, giving it the particular properties of the urine in this disease.

* I cannot avoid thinking, that the quick evacuation of urine, after watery fluids have been drank, has been in some degree misunderstood. It is a certain time, not very inconsiderable, after the first quantity of aqueous fluids has been drank, before urine is made; but more aqueous fluid being drank with frequent repetition, the blood soon receives a superabundant quantity of water, and this is thrown out by the urinary passages at very short intervals. What has been last drank is not to be supposed to be evacuated, but a certain quantity of water is separated by the kidneys from the general store of water which had been accumulated in the blood vessels. Although, therefore, the evacuation of water by the urinary passages happens soon after a quantity of aqueous fluid has been drank, yet it does not take place in so short a time as has commonly been imagined.

I cannot explain the experiment mentioned by Dr. Darwin, in which after nitre had been taken into the stomach it was discoverable in the urine, but not in the serum of the blood. I am persuaded, however, it will hereafter be explained without having recourse to the supposition of there being a communication between the absorbents of the stomach, and those of the urinary organs.

The mixture of chyle with the urine, unless much sweeter than common chyle, would not (as we have oftener than once observed) form the sweet urine of Diabetes, and therefore this morbid change must depend on some other cause than the mere mixture of the chyle with the urine.

Tubuli uriniferi, so enlarged as readily to allow the chyle to pass, could hardly fail of admitting likewise the red globules of the blood. The urine in Diabetes, however, shews no mixture of the red globules, but is of a colour somewhat like whey.

The mammillary substances of both the kidneys, in the case which we have described, had the natural firmness; and the tubuli (which in most kidneys are sufficiently visible) did not appear in the smallest degree enlarged.

When so many men of ingenuity have failed in their attempts to explain the cause of this disease, I will not venture to bring forward any theory of my own. It would probably be only adding to the mass of conjectures, with which medical science has been already too much loaded. I should wish, however,

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to recommend it to the future observation of others, to determine how far the appearance of the kidneys, which has been described in a former part of this paper, may be constant in diabetic patients, and therefore whether Diabetes may not probably depend, in an important degree, although perhaps not entirely, upon a morbid action of the kidneys themselves.

VI. *A Case*

VI. *An Account of two Cases, shewing the Existence of the Small-pox and the Measles in the same Person at the same Time. And an Account of a Case of Ague in a Child in Utero. By P. RUSSEL, M. D. F. R. S. Read March 3, 1795.*

THE MEASLES and the Small-pox were epidemical at Aleppo, in the year 1765. They both made their appearance about the same time in December of the preceding year, and gradually increased through January, February, and part of March. The Measles disappeared in April, while the Small-pox lingered till the summer solstice.

Till the month of March both diseases were, in general, of a favourable kind. The eruption in the Measles commonly happened on the evening of the third, or morning of the fourth day. The eruptions were first visible on the face; and began to fade every where on the sixth or seventh day, but seldom disappeared entirely sooner than the tenth. They were rather more prominent than those which I had observed in Europe, and the branny skurf left on the skin was considerably less: in other respects

there was no material variation from Sydenham's Accurate Description of the Measles epidemic at London in the year 1670.

After the beginning of March, the disease became more formidable. The eyes were more inflamed, the coryza, the cough, and the febrile symptoms were in a greater degree than in the former months. The eruption appeared irregularly from the second to the seventh day of the fever. The eruptions often appeared on the breast before they were seen on the face; they were of a fainter colour, and the branny skurf was, in general, less. A vomiting and diarrhoea were common symptoms from the beginning; the latter continued throughout the disease; the former usually ceased as soon as the eruption was complete: but very young subjects continued to be harassed by retchings, excited by the irritation of sneezing or coughing.—About the height of the disease, the sick were subject to short exacerbations of the fever, accompanied with difficulty of breathing, and stitches in the chest, which recurred several times in the twenty-four hours. On the whole, the Measles, after the
month

month of February, approached nearer to the anomalous species described by Sydenham under the year 1674.

From the end of February, the Small-pox, which hitherto had been of a mild distinct kind, became irregular and much more fatal. The pustules were confluent on the face; on other parts distinct, but generally flattish, and indented at the top. In many cases they suppurated imperfectly; in others, they remained dry or husky: and some instances occurred of their turning black about the seventh day. A diarrhoea and tenesmus frequently attended from the beginning to the end.

Though a large proportion of the infected still recovered, they continued long in a sickly state. Children were not only reduced by the diarrhoea, but were often attacked with the whooping-cough, or with erratic fevers, both being at that time epidemic in the city. In the more malignant kind of Small-pox, many died between the seventh and ninth day; some struggled to the eleventh; very few recovered.

When the Small-pox and the Measles pro-

prevailed in the same season, many of the children suffered both diseases in succession, as usual. The Measles were rarely observed to succeed the Small-pox in less than twenty days, reckoning from the eruption. The Small-pox commonly succeeded the Measles somewhat earlier in the third week; but several cases were met with, in which the pustules of the Small-pox were discovered on the face, before the total disappearance of the Measles on the limbs; that is, on the eleventh or twelfth day.

It has already been remarked, that few of the infected in either disease died before the month of March. But from that time the mortality in the Small-pox was considerable; as those who had just before suffered from the Measles, and were reduced by the diarrhoea to a state unfavourable for the reception of a fatiguing distemper, generally perished; unless the supervening Small-pox was of a mild kind. The danger appeared to be rather less where a bad kind of Measles succeeded the Small-pox.

The reciprocal influence of the two diseases in the same subject was carefully attended

tended to in above three hundred cases; and so little did the quality of the first disease seem to influence that of the second, that a mild, distinct Small-pox was often observed to follow the worst kind of Measles, and vice versa.

In the month of March, an instance occurred where both diseases were conjoined in the same patient. The subject was a female child two years old, of a pale, delicate complexion. The redness of the eyes, the coryza, and the cough which accompanied the fever, led me to expect the Measles. On the fourth day, the eruptions of the Measles were visible on the face, the neck, and the back; but at the same time a few eruptions of a different kind were interspersed on the face and neck, which, if they had been the sole eruption, I should without hesitation have declared to be the Small-pox. The progress of the pustules on the fifth proved them to be variolous. Both eruptions were of a favourable kind, and distinctly pursued their regular course. On the eighth day, the Measles were fading fast, while the variolous pustules on the face were near their height.

height. The pustules were not numerous, were very distinct, and ripened perfectly. The cough continued to be a troublesome symptom, especially in the second week. A diarrhoea supervened about the fourteenth day, and contributed to render the child's recovery very slow.

In the month of April I met with a similar case. A healthy boy, three years old, was attacked with the usual symptoms of the eruptive fevers, at that time epidemical. The cough rather seemed to indicate the Measles. On the third day, the eruptions of the Small-pox and Measles made their appearance together. The variolous pustules were of the small, round kind, and came to perfect maturity; but were more numerous than in the former case. The Measles were of a fainter colour, and left behind them still less of the branny skurf, agreeing in both circumstances with the disease then prevalent.

On the sixth day of the fever, a diarrhoea and tenesmus were joined to the harassing cough, and reduced the patient so low in the second week, that his life was despaired of. The flux, however, leaving him
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towards the end of the month, he recovered.

An Account of a Case of Ague in a Child in Utero.

In the month of June, 1767, a young healthy woman, at Aleppo, already the mother of two children, and then in the seventh month of her third pregnancy, was attacked with a tertian fever. The fits returned regularly about noon, and terminated in less than ten hours by a profuse sweat; but it was remarkable in this case, that the foetus seemed to suffer a paroxysm perceptibly distinct from that of the mother.

About eight in the morning of the odd days, the woman felt the child (as she expressed it) tremble with great violence; and she was sensible at the same time of a sudden weight and coldness in the womb. The coldness went off in less than fifteen minutes, and was succeeded for more than an hour by a glowing heat; during which, the child was at intervals somewhat

what restless, though its motions then, she said, were not tremulous, but like what she had felt at other times when in health.

While this happened to the child, the mother to all appearance remained well; her pulse was not altered, and she only complained of lassitude, and a dull pain in the forehead, the usual forerunners of the paroxysm.

On the access of the fever at noon the child again became unquiet. It stirred but little while the cold fit lasted, and throughout the hot fit was alternately quiet and restless. The mother constantly insisted, that the struggles of the child at noon were totally of a different kind from the tremulous motion of which she was sensible in the morning.

The same circumstances invariably attended every fit, till the eleventh day of the disease.

The peruvian bark was administered on the termination of the fifth paroxysm. On the eleventh day, the child remained quiet all the morning; and the mother, feeling less of her usual head-ach and lassi-

tude, was in hopes of being cured as well as her child. Her fit, however, returned at noon as violent as ever; and the child, who till that time had been perfectly quiet, became disturbed as usual during the mother's paroxysm. The bark was repeated in the succeeding intermission, and the fever did not return.

I have met with a few instances somewhat similar; but in all of them, more might be ascribed to the power of the mother's imagination than in the present case: the patient being a woman of remarkable good sense, of a chearful disposition, and who had never been subject to hysterical ailments.

VII. *Cases and Observations on Strangulated Hernia.* By EVERARD HOME, Esq. F. R. S. &c. Read April 7, 1795.

IN cases of Strangulated Hernia, some require an operation to be performed a few hours after Strangulation has taken place, while others admit of an operation being much longer delayed.

There are general symptoms common to all such cases, but these different kinds appear to have also symptoms peculiar to themselves. To ascertain these peculiar symptoms would enable us to decide upon the nature of each particular case, and to determine the most proper time for performing an operation.

With a view to throw some light upon this subject, I have drawn up the following cases, and hope that they may excite others to prosecute this enquiry.

CASE 1.

Elizabeth Walbank, fifty-four years of age, of a spare habit of body, had for seven years a femoral omental rupture on the left side, which had never been reduced.

duced. On the 31st of October, 1794, at eleven o'clock in the evening, immediately after a severe fit of coughing, she felt a pain in the part, and had a violent attack of vomiting, accompanied with a general tenderness over the belly. The retchings returned at intervals during the night; next day all these symptoms became more severe; some blood was taken from the arm, and attempts were made to reduce the rupture, but not proving effectual, she was sent to St. George's Hospital, and became my patient. I saw her at eleven o'clock in the evening, exactly twenty-four hours after the symptoms of Strangulation had taken place. Her pulse was quick and small, her skin dry and hot to the touch, the retchings were extremely violent, attended with pain, and a sense of dragging down (as she expressed it) from the navel, which returned about every five minutes; there was also a great degree of tenderness over the belly, and the tumor itself gave pain when handled.

The tumor was about the size of half an orange, was distinctly to the feel composed of omentum, and was so situated as to preclude all examination of Poupart's ligament by the finger; nor could the hernial sac,

on account of its distention, be removed from that situation. Any efforts to reduce a rupture, so circumstanced, are generally unavailing, and in this case they did not succeed. The warm bath was employed, and the fumes of tobacco were injected into the rectum, but no abatement of the symptoms took place.

The woman suffered so much from the vain efforts to vomit, and the general state of irritation, that she readily consented to have the operation performed, as she felt within herself that she could not survive unless something effectual was done for her relief.

When I laid open the hernial sac in the usual manner, nothing except omentum was brought to view; but when this was spread out, and turned up towards the abdomen, a small tumor, formed by a doubling of the intestine, was discovered at the bottom of the sac, which was so much pressed upon by Poupart's ligament, as not to admit the end of a probe to pass between them. The gut was very much inflamed, its surface was perfectly smooth, and uniformly of a dark red colour, but as mortification had not taken place, it was thought

to be capable of recovery, and was therefore, as soon as the ligament was divided, returned into the belly. The portion of omentum adhered to the orifice of the hernial sac, and was found upon trial too bulky to pass through the orifice which led to the abdomen; it was therefore, from necessity, removed; this was done by dividing it in its expanded state, near to the orifice of the sac, with a pair of scissars; two arteries on the cut edge bled so violently as to require being secured by ligatures, the ends of which were brought out at the external wound, and the whole was superficially dressed*.

As the portion of gut was very much inflamed, twenty drops of tincture of opium were given, immediately, to lessen the irritation produced by the inflammation, and repeated at four o'clock in the morning.

January 2. The retching was intirely stopped, and the pain in the belly much

* Tying the omentum is objected to by Mr. Pott, as inflammation very often extends from the part included in the ligature along that membrane, and destroys the patient. He also mentions that hæmorrhage will probably never take place on cutting it. The above case is an exception.

abated.

abated. A glyster of warm water was injected, and fifteen drops of tincture of opium given in a draught, both of which were repeated at night. The glysters were only retained about an hour.

January 3. She was tolerably easy, but languid; the glyster of warm water was repeated; at ten o'clock in the evening she had a pain in the lower belly, for which she took twenty drops of tincture of opium; the same quantity of opium, in consequence of a continuance of the pain, was repeated at one in the morning.

January 4. The pain continued, accompanied with a constant desire to make water; the belly was fomented, after which she made water freely, and this relieved the pain in the belly. At two o'clock she took an ounce of a mixture containing $\mathfrak{z}\mathfrak{v}$ of infusion of senna, $\mathfrak{z}\mathfrak{v}$ of tincture of senna, and $\mathfrak{z}\mathfrak{i}\mathfrak{j}$ of kali tartarizatum, and in an hour had a motion; her pulse was soft, and beat an hundred times in a minute; her thirst continued, but was relieved by sucking oranges. She took some panada, sago, and her usual opiate at night.

January 5. Had a confusion in the head, with disturbed dreams: these were considered

as effects of opium, which was therefore left off. The wound had a favourable appearance. January 7. The ligatures came away, and the wound was going on kindly.

January 9. She became restless, feverish, languid, and had no appetite for food; all these symptoms increased on the 10th, and on the 11th, at night, she died, exactly ten days after the operation.

On inspecting the body after death, the strangulated portion of intestine, extending to two inches and a half of the ilium in length, was found to have exactly the same appearance as it had when exposed during the operation. Its internal membrane was extremely vascular, and had an inflammatory exudation of coagulating lymph adhering to different parts of its surface. There was no appearance of inflammation on the omentum. So large a portion of it had been removed during the operation, that only an inch of its anterior part remained attached to the transverse arch of the colon. In several parts of the abdomen there were slight adhesions between different convolutions of the intestines.

In this case the symptoms were, from the beginning of the attack, those of an inflamed

flamed intestine: the operation arrested the progress of the inflammation, and prevented mortification from taking place; but the inflammation had proceeded too far to admit of resolution.

CASE 2.

Edward Linton, sixty-four years of age, had for nine years a Scrotal Hernia on the left side, which was in general without much difficulty reduced. On the 26th of January, 1795, about four o'clock in the morning, after a fit of coughing, the tumor was encreased by the gut being forced down, as had frequently happened before, but symptoms of Strangulation now took place. In the course of two hours a vomiting came on, which ceased as soon as the stomach had discharged its contents, nor did it return till something was again received into the stomach. He continued in this state, and the vomiting was rendered frequent by the incessant thirst obliging him to drink frequently. At nine o'clock on the evening of the 29th, he was brought to St. George's Hospital, and put under my care. His pulse was an hundred in a minute, and
by

by no means unusually small; his tongue was white, his mouth dry, and he was much distressed by hickup; there was no pain extending over the belly, or in the tumor formed by the rupture, unless what arose from its having been much handled.

Upon finding my attempts to reduce the rupture ineffectual, I cut down upon the ring of the external oblique muscle, and divided it with a view of taking off the stricture, relieving the symptoms, and rendering the parts afterwards more easy to be reduced. The tumor immediately felt softer, and appeared to be diminished in size; he was therefore left in this state, the parts having been superficially dressed, till next day.

January 30. The symptoms were in no respect relieved, and the rupture could by no means be reduced; it was therefore thought right to perform the operation. The sac was laid open, was found to be extremely thick, and contained about an ounce of water; a portion of the intestine was discovered closely embraced by the orifice of the sac, in appearance free from inflammation, and was returned with some diffi-

difficulty into the cavity of the abdomen, The wound was superficially dressed, and an opiate was given to quiet the stomach.

January 31. The hickup and vomiting continuing, opiates were given; a glyster, composed of a pint of milk and two drachms of aloes, was injected; and another of the same composition was repeated in a few hours, both of which were returned without relieving the constipation.

February 1. No abatement of the hickup and vomiting. A glyster, consisting of a pint of milk, with half an ounce of aloes, was thrown up without procuring a motion. His pulse was full and strong, there was a great degree of inflammation in the wound, extending up to the spine of the ilium, and down to the testicle: ʒviij. of blood were taken away from the arm, and two grains of opium were given at bed time.

February 2. The vomiting was less frequent; he took five grains of calomel and ten of jalap, about noon, and the aloetic glyster was administered as before, which procured a stool in the evening; this was the first evacuation since the Strangulation, a period of eight days in all, and three from the

the time of the Strangulation being removed.

February 3. The vomiting abated, but the hickup was troublesome; the calomel and jalap were repeated, and a glyster of warm water was thrown up, but no evacuation took place.

February 4. The calomel and jalap, and the aloetic glyster were repeated. He had a stool in the afternoon, and another in the night.

February 5. The vomiting intirely ceased, but the hickup, and a degree of nausea, continued.

February 6. Ten grains of calomel, and ten of jalap, were given, and he had four copious evacuations.

February 7. The hickup continued. In the afternoon the calomel and jalap were repeated.

February 8. He had a good night, the hickup being only at intervals; he had no motion; the calomel and jalap were therefore repeated.

February 9. The hickup had not entirely left him, and he had two copious stools. The inflammation had spread from the external

ternal wound to the testicle, and suppuration had taken place through the whole extent of the scrotum; a hæmorrhage took place in the evening, which made the removal of the testicle necessary, in order to secure the vessel. He lost above a pound of blood, which made him low and faint; and was directed to take three grains of opium.

February 10. He had a tolerable night, the hickup being intirely gone. From this time there were no symptoms of the bowels being affected. In three days the evacuations became regular, and afterwards, when otherwise, the bowels were readily acted on by mild laxatives. He gradually recovered his strength, and in the beginning of April was quite well.

In this case there was no inflammation in the portion of the strangulated gut, although it remained four days and a half in that state; the symptoms arose intirely from the obstruction to the passage of the contents of the bowels, producing irritation in the stomach, and the other effects which have been stated.

CASE 3.

Margaret Collins, aged forty, had for
a year

a year a femoral rupture of the left side, which was always readily reduced. On March the 28th, about five in the evening, while standing on a ladder, cleaning some wainscot, a portion of the gut came down. She felt immediately a darting pain between the navel and pit of the stomach, very quickly followed by giddiness, sickness, and vomiting, which did not cease upon the stomach being emptied, but continued for some time, and returned at intervals; whatever was taken into the stomach was immediately rejected, and at such times she felt a very severe pain in the tumor, and the region of the stomach.

March 29. The symptoms continued the same, and for about ten minutes she had hickup.

March 30. About six in the evening, she was brought to St. George's Hospital, and fell under my care. Her pulse was frequent, her tongue white, and she had a great degree of thirst. The tumor was less than a hen's egg, and situated directly upon Poupert's ligament. Fourteen ounces of blood were taken from the arm; attempts were made to reduce the rupture, which proving

ineffectual, recourse was had to the warm bath ; tobacco fumes were injected, and ice was applied externally, but all without success. The symptoms suggested the opinion of an inflammation having taken place in the portion of strangulated intestine. They were not however in the same degree as in the case first stated, as the pulse was less contracted, the retchings less frequent, and the general irritation and pain in the belly less violent. It was thought proper to proceed to the operation, which was performed at eleven at night.

When the hernial sac was laid open, a small fold of intestine was exposed, having its external surface very vascular, and a shaggy appearance, from a covering of coagulating lymph which adhered to it ; this was become vascular : the gut itself was also much thickened in its coats. The stricture was removed by dividing Poupart's ligament, the gut was returned into the belly, the external wound was superficially dressed, thirty drops of tincture of opium were given in order to allay irritation, and in the night a glyster, consisting of warm water, was thrown up. Immediately after the
opera-

operation she appeared to be relieved, and the retching intirely ceased.

March 31. Her pulse was an hundred and two in a minute. She was very thirsty, had hickup for about ten minutes; had a pain in the lower belly which went off upon making water. She took an ounce of the laxative medicine, which was exhibited in the first case, but without effect; at noon she took ten grains of calomel and ten of jalap, and at four in the afternoon a glyster was thrown up, consisting of a pint of milk, with ʒss. of aloes: at ten at night the calomel and jalap were repeated, with a view to empty the bowels as quickly and completely as possible, on account of the inflammation in the strangulated portion of the intestine.

April 1. She had two copious stools; her bowels were easy, except that flatulency sometimes took place. She was less thirsty, the pulse soft, low, and ninety-four in a minute. She had another motion about four o'clock. In the evening the jalap was repeated, with seven grains and a half of calomel.

April

April 2. She slept well in the night, was free from pain, her pulse soft, and eighty-two in a minute. The calomel and jalap were repeated, and as she had no stool, the calomel was again repeated at night, alone.

April 3. As she had no stool, an aloetic glyster was thrown up as before; the pulse was now only eighty. At noon she took twenty grains of jalap, and at two had a stool, and in the evening three more.

April 4. She had another motion in the night, after which she was griped, but the griping went off on taking twenty drops of tincture of opium; she rested well, and her pulse was seventy-five.

After the 4th she had no complaint in her bowels, the wound went on kindly, and she got well in a fortnight.

In this case the symptoms indicated inflammation, and the appearance of the intestine, when exposed in the operation, proved that inflammation had taken place. There were also the symptoms of compression having obstructed the bowels, as they remained in an indolent state for some time after the operation.

From these cases we learn, that the symptoms correspond with the state of the intestine. When the stricture is only sufficient to compress the intestine, and to prevent the contents from passing through the strangulated part, there is vomiting, hickup, thirst, and general uneasiness, which symptoms come on some hours after the protrusion of the gut, and are very slow in their increase.

When the stricture is in so great a degree as to produce inflammation on the compressed part of the gut, the symptoms come on immediately; the vomiting does not cease upon the stomach discharging its contents, but the retchings continue: there is a considerable tenderness over the whole belly; the pulse is quick and very small, and the spirits of the patient are much depressed. These symptoms are more or less violent, and their progress is more or less rapid, in proportion to the degree of the inflammation. If it only produces adhesions, the pulse is less contracted, there is less tenderness over the abdomen, and less depression of spirits.

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When the stricture is so tight as to obstruct the circulation of the blood in the part, all these symptoms are met with in the greatest degree of violence; an unusual coldness is felt over the surface of the body, and mortification takes place in the strangulated portion of the intestine.

As in all the cases which I have stated there was an opportunity both of tracing the symptoms, and examining the state of the intestine, the conclusions which have been drawn are the more to be depended on; and should they be confirmed by future observations, they will assist us considerably in judging of the expediency of performing the operation at an earlier period in some cases than in others. I am induced to believe, that they are strongly in favour of immediate operation in cases which are in general thought to admit of delay.

The femoral rupture, on account of the strength of Poupart's ligament, will be more liable to have the parts compressed in a greater degree, and consequently to be more violently affected by inflammation.

In such cases the operation should be sooner performed; whereas, on the contrary, surgeons have been more inclined to delay it, from the difficulty and danger arising from the parts which are liable to be hurt in performing the operation.

Constitutions are very differently affected by the same local mischief; some patients recover after mortification has taken place in the portion of strangulated intestine, while others sink under a much less violent degree of inflammation; it is therefore in general right, even in the most hopeless cases, to perform the operation. There is, however, one symptom that comes on in the last stage of this disease, which appears to be the immediate fore-runner of death, and after it has taken place, I apprehend the operation will always prove ineffectual. This is a general coldness, attended with moisture over the surface of the body; it is, to the feel, even colder than the skin of the same person when dead; but the real degree of cold (I believe) has never been measured by a thermometer.

In every case I have met with, in which
this

this symptom had taken place, the patient died; in some the operation was performed, in others it was not; but in all of them the patients continued to sink gradually, and in less than twenty-four hours expired.

VIII. *A fatal Case of Hernia of some of the abdominal Viscera strangulated in the Cavity of the Thorax.* By JOHN CLARKE, M. D.

Read May 5, 1795.

LATE in the evening of Saturday, the 18th of December, 1794, I was desired to see Mr. J. the subject of this case.

He was a man of a middle stature, about forty years of age. Till within the last two years he was generally healthy; but from his earliest years he had been occasionally liable to head-aches, attended with nausea. They seldom lasted more than twelve hours, and were generally relieved by vomiting.

About the end of December, 1793, he fell from a height, by which two of his ribs were fractured. The accident was followed by no unusual symptoms, and he recovered from it very well.

After the fracture of his ribs, his head-aches became more frequent. He often felt in the region of the stomach, a degree of prominence or fulness, about the size of the palm of his hand, which

which gave him pain on the slightest pressure, so that he was forced to wear his waistcoat open, or very loosely buttoned.

Through his whole life, but especially since the fracture of his ribs, he had been sometimes costive for several days. On such occasions, the tenderness and uneasiness of the epigastric region was much increased. The constipation commonly went off spontaneously, or yielded to gentle laxative medicines.

He had been occasionally subject to violent pain in his left shoulder, particularly after eating a hearty meal; but never had any symptom of jaundice.

During the last twelvemonth, he had eaten his meals more irregularly than he had been accustomed to do before; to which he attributed an increase of the uneasiness of his stomach.

About two days before I saw him, he had taken more exercise than usual without any refreshment; and returning home much fatigued, he complained of a sense of coldness. As it was late he missed his dinner, but drank tea and ate heartily of toast and butter. At supper, he made a

plentiful meal of cold roast beef and porter.

When he arose next morning, feeling a weight at the pit of the stomach, he took six drams of a saline purgative, without any effect. At two o'clock he made a hearty meal of boiled beef, which he swallowed hastily in large pieces.—In half an hour he began to complain of pain in his bowels, and went to bed, where the pain increasing, he drank some brandy and water, which he soon rejected by vomiting, along with the greatest part of his dinner as he had swallowed it. The disposition to vomit not subsiding, he sent for Mr. Williams, of Vere-street, his apothecary, who visited him about five o'clock in the afternoon of Friday, December 19th.—He then complained of pain resembling a severe colic.—His pulse was seventy in a minute, not full, nor tense: there was no remarkable heat on the skin, nor thirst; nor was there any tension of the belly.

Under the care of Mr. Williams he was blooded, went into the warm bath, and took several purgative medicines. He was afterwards attended by Dr. Milman, Dr.

Pitcairn and myself *.—His belly was also fomented, and stimulating glysters were injected without producing any evacuation of faeces.—This treatment was pursued between the 19th and 22d of December.

At this time vomiting occurred at intervals; the pulse was not increased in frequency, but it had become rather fuller, and the patient complained of some tenderness and pain of the belly, when pressed, which he had not done before. He hic-coughed frequently, but this symptom was so little urgent that it could be allayed by taking a little warm tea.

Tuesday, December 23.—A glyster, made of an infusion of tobacco, produced no other effect than languor, and fainting, with nausea.

By this time, the belly was becoming more full and tense, with an increase of the pain upon pressure, especially on the right side. A blister was now applied to his belly.

Wednesday, December 24th, No favourable alteration had taken place. During the whole course of the disease, the patient had not been sensible of any motion in any part of the intestinal ca-

* The strongest purgative medicines were given, and frequently repeated.

nal: the pulse had never been more frequent than ninety in a minute. The pain was not commensurate with the tension of the belly; and the symptoms altogether were milder than such as commonly occur in cases of long continued inflammation of the intestines with constipation.

As none of the medicines had produced any good effect, electricity was applied to the belly twice on this day, with the intention of stimulating the intestines supposed to be torpid.

Thursday, December 25th.—Draughts composed of salt of hartshorn with the camphorated mixture were given with the same view, but were quickly rejected by vomiting.—At this time, the patient complained of thirst, and expressed a great inclination for brandy and water, which for the same reason was allowed, and he drank it plentifully. Some was also injected into the rectum.

During the last two or three days, though he had occasional pain and vomiting, he suffered more from hiccough and a sense of fulness, as if he should burst, or as if
(to

(to use his own expression) the contents of his belly were now beginning to rise into his throat. His breathing at this time became shorter, and more difficult; and this increased towards the evening of this day, when his hands became cold: he complained of much pain in the region of his heart; and early in the morning of Friday, December 26th (having retained his understanding to the last) he died.

Leave was obtained to open the body on Saturday, in the examination of which, I had the assistance of Mr. Williams, and Mr. Debruyne.

On the day of the dissection, the body was placed on a table, and a little more than the middle of the body was exposed.

DISSECTION.—Here is the general outline of the dissection.

Externally the abdomen was very much swollen and tight to the feeling. Upon cutting into the cavity of the abdomen, the stomach and all the intestines appeared greatly distended with fluid, and showed marks of inflammation, especially at the limits of their mutual contact. The intestines were glued together by coagulating lymph. The head of the colon

lon adhered very firmly by recent inflammation to the surface of the neighbouring peritonæum. This part of the gut was enormously distended and inflamed; and that portion which lay in contact with the parietes of the abdomen, was of a very dark colour, as if it had been beginning to mortify.

From the head of the colon, the large intestines were found filled with fluid contents, and bearing marks of inflammation on their outer surface.

On the left side of the transverse arch of the colon, the intestine appeared as if dragged up towards the diaphragm, above, and a little more forward than the spleen.—Here its course was rendered obscure by the general fulness of the intestines, which intirely intercepted our view.

The stomach, the whole of the small, and part of the great, intestines were taken away, that we might better examine what remained.—We then found a part of the colon forced through an aperture in the diaphragm into the cavity of the thorax. This aperture in the diaphragm was on the left side, about three inches from the ribs,

ribs, and situated more forwards than the natural opening for the passage of the œsophagus,

From the connexion of the colon with the epiploon, a portion of the latter was carried up along with it, as was also a part of the outer edge of the left lobe of the liver. The whole of this lobe was altered from its natural appearance, being very thin and flabby. This viscus was altogether uncommonly small; but in other respects it appeared healthy.

The great intestines, below the strangulation, were contracted in their whole course to the anus, contained no feces, and had a perfectly natural appearance.

All the other viscera of the abdomen were found.

On exposing the left cavity of the thorax, we found the lungs so much collapsed, as not to occupy more than a third part of the cavity; but in other respects, they were in a natural state.

We next examined the viscera, which had been forced through the perforation in the diaphragm.—The portion of gut was covered anteriorly with a surface of the epiploon. This, as well as the intestine

tine itself, was in a high degree of inflammation. The intestine was completely full of fluid, so as to fill up the aperture of the diaphragm, and effectually to prevent all passage into, or out of it.

Another circumstance also presented itself. The diaphragm near the intestine so protruded, was firmly connected by an old adhesion, about an inch in length, to the bony part of two ribs, exactly at that place where they had been formerly fractured. An irregular callus projected inwards, by a kind of spinous process; and to this the diaphragm was attached.

Upon the cellular substance, so connecting the diaphragm to the ribs, were marks of recent inflammation, which extended over a small surface of the surrounding pleura: but it may be remarked, that the investing membrane of the thorax had in no other part been affected by the disease.

The right side of the thorax, as well as the heart and its pericardium, were in a healthy state.

OBSERVA-

OBSERVATIONS.

Similar perforations of the diaphragm, with an intrusion of more or less of the abdominal viscera into the cavity of the thorax, have been sometimes found in children*; but the patients have been soon destroyed after birth, by difficulty of respiration, from the lungs not being capable under such circumstances of being expanded. In these instances, the abdominal viscera have been sometimes found in the right, and sometimes in the left side of the chest.

My enquiries have not furnished me with any other instances of strangulation, or even of perforation through the diaphragm.

Several things in the history of this case, compared with the appearances after death, induce me to believe that the viscera had been for a long time in this unusual situation. The diminished size of the lung

* Vide Med. Observ. and Inquiries, Vol. I. Some specimens of this kind are preserved in the collection in Windmill-street, made by the late Doctor Hunter.

of the left side, his occasional costiveness for many years, the pain which he always felt from any pressure on his belly, and the pain in his shoulder, all favour this opinion. The liver too was smaller and softer than is natural; and such changes could not have taken place on a sudden.

Whilst he lived regularly as to his meals, and the peristaltic motion was not disturbed, this unusual state of the viscera produced no remarkable symptoms; but if at any time he ate a larger meal than ordinary, he was subject to costiveness, and to a pain which he always referred to the epigastric region. At such times, it is probable that a larger quantity of fæces than usual was forced into the protruded gut, and against the perforation through the diaphragm, by which their passage was for a time impeded.

This cause appears to have laid the foundation of his death. He had eaten voraciously, and had accelerated the passage of the food by a purgative; by which means a Strangulation was brought on, so obstinate as to resist all the medicines employed for its removal.

It

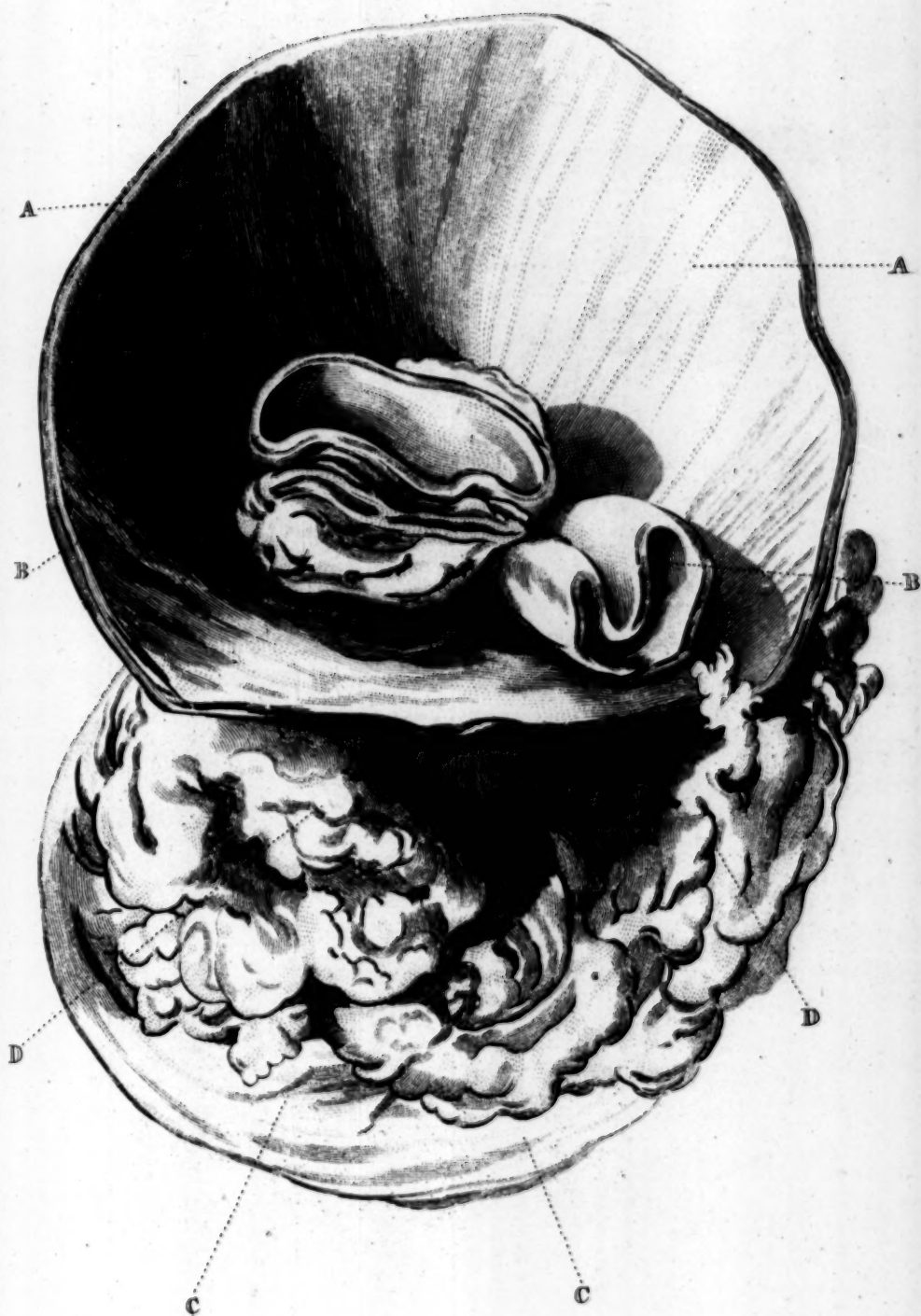
It is farther to be observed, that (considering the nature of the disease) the symptoms were more mild than is usual in cases of fatal constipation from Strangulated Hernia, Introsulception, &c.—and that, although the portion of intestine and epiploon found in the cavity of the thorax, and a large part of the contents of the abdomen, were in a high degree of inflammation, yet the cavity of the thorax partook but in a slight degree of the disease*.

* Since this paper was read in the Society, I find that Ambrose Pafé has described a case in which a patient survived a penetrating wound, into the chest and through the diaphragm, for eight months, during which time he suffered great debility of the stomach, and pain like colic, especially in the evening. After one of these attacks he died, and his body was opened, when a large part of the colon was found to have passed through the wounded diaphragm into the thorax.—Vide Pafé, Lib. 9. Cap. 30.

In the case described by Pafé, the disease was evidently occasioned by the wound; whilst in that, which is the subject of this paper, there is every reason to believe that the perforation in the diaphragm had existed through the whole of the patient's life.

PLATE I. No. 8.

- A A. A portion of the diaphragm viewed upon its surface next the abdomen.
- B B. Two cut extremities of a part of the transverse arch of the colon, as it was passing through the præternatural opening in the diaphragm.
- C C. The part of the transverse arch of the colon which had passed through the præternatural opening in the diaphragm into the cavity of the thorax. It is seen under the lower edge of the diaphragm, precisely in the same way as it appears in the preparation, which is still preserved.
- D D. A part of the omentum a good deal loaded with fat, which had passed through the opening in the diaphragm, along with the colon.



Will. Ait. del.

Will. Stielton sculp.



PLATE II. No. 8.

A A. A portion of the diaphragm viewed upon the side of the thorax.

B B. Parts of two ribs which adhered by a membrane to the diaphragm.

C C. A part of the tranverse arch of the colon, which had passed through the præternatural opening in the diaphragm, and was lodged in the cavity of the thorax.

IX. *On the Effect of the pure fixt Alkalies, and of Lime Water, in several Complaints.*

By G. BLANE, M. D. F. R. S. &c. Read March 1, 1796.

1. In the year 1783, a naval officer, on his passage to England from the West Indies, was seized with a fever, for which, among other remedies, a blister was applied. The usual means of preventing strangury having been neglected, he was much distressed by that symptom, and he continued for two years afterwards to be greatly troubled with a frequent desire to make water, which he passed with some degree of difficulty and uneasiness. He tried a variety of remedies to no purpose, so that being in a great measure prevented from going into company, and his life being extremely uncomfortable, he retired into a remote part of the country. There he consulted a practitioner (whose name I could not learn) who advised him to use the *aqua kali puri*, taking his complaint most probably for the gravel. Immediately

diately upon the use of this he began to recover, and very soon got free of his complaint.

After his return to town he related this to me, and profiting by the hint, I have frequently since that time employed the same remedy with like success in cases of a similar kind. The cases I mean are those in which there is no suspicion of stone or gravel (the only cases in which these medicines have commonly been thought useful) but where the complaint proceeded from a preternatural tenderness or irritability of the urinary passages and bladder.

I considered this as a matter of mere experience, no mode of accounting for it having then occurred to me. The late experiments in chemistry, however, seem to throw light on the *rationale* of this practice; for it is found that urine, in its most healthy and natural state, contains a certain portion of that peculiar acid *, which, when superabundant, concretes into gravel or stone.

* This acid was first observed and proved to exist in the urine about twenty years ago, by Scheele, in Sweden; and its nature has been farther illustrated since by Cadet, in France, and Mr. Murray Forbes, in England.

Even when the body is in a morbid state, I have never but in two cases met with urine which gave signs of a disengaged Alkali. One of them was that of a young man labouring under *phthisis pulmonalis*; the other that of a middle aged woman, in a continued fever. It seems probable, therefore, that the irritating property of the urine in this disease depends upon the acid, and that the Alkali acts by neutralizing it. That the acid of the urine is, by the use of the Alkali, either neutralized or prevented from being formed, is a matter of demonstration, for under the use of it the urine loses its power of reddening the blue vegetable tests.

I am informed by Dr. George Fordyce, that the mild vegetable Alkali, or Kali, has in some cases been found to have a power over the stone equal to the same Alkali in its pure or caustic state. The latter however acts in such small quantities, that the effect does not seem to be in proportion to its absorbent property.

As it might be presumed from analogy, that calcined magnesia would have the same medicinal effect as the pure Alkalies and Lime Water, I tried it in calculous complaints,

plaints, but could not perceive that it had any sensible virtue.

May not the superior efficacy of the pure Alkali over other absorbent substances depend upon a chemical fact discovered by Scheele, that the acid of the urine has a weaker affinity with Alkalies, than even the carbonic acid? For while this acid is combined with an alkali or earth, these substances cannot act as absorbents with regard to an acid which has a weaker affinity.

The property of the urine by which it stimulates the surface of the urinary passages, cannot be reckoned morbid, any more than the acidity upon which it depends; for a certain degree of specific stimulus is necessary to every species of animal fluid, in order to excite the contractions of their containing cavities and vessels, either for the purpose of expulsion or propulsion, in which their respective functions consist. There are other contents in the urine, such as common salt, the phosphoric and ammoniacal salts, which have more sensible acrimony than this acid; but it does not follow that they have more effect in stimulating the bladder, for the peculiar power of fluids in stimulating their containing vessels and

cavities does not depend on their simple acrimony. The natural state of the urine therefore being given, the morbid effect will depend on the preternatural sensibility of the cavity or passage with which the urine comes in contact.

These facts, and the explanation given of them, throw light also on a circumstance known to most practitioners, that the alkaline medicines given as lithontriptics mitigate and even remove the symptoms of the complaint, though the stone remains undiminished in the bladder. This arises, I apprehend, not only from the smoothness of the stone, in consequence of no new accretion being formed, but from the effect of the medicines in diminishing the acrimony of the urine.

What has been said of the pure Alkali will also apply to Lime Water, for though I have not equal experience of this last, yet I have seen manifest advantage from it, and have sometimes employed it interchangeably, sometimes in conjunction with the Alkalies.

One of the most remarkable instances of relief from these medicines was in the case of a patient, who, in consequence of strictures of the urethra, came to be affected with

with an opening in that passage *in perinaeo*, and had at times laboured under dangerous suppressions of urine. He was also of what is called a scorbutic habit, and had for many years had symptoms of gravel. In this state I directed a course of Lime Water and caustic Alkali, under which he has for several months been free from suppression of urine, the whole of it passes the natural way, in so much that the lateral opening seems to be healed, and the strictures having been in some measure removed by bougies, which he had used more or less since the beginning of this complaint, his life has been tolerably comfortable *.

The good effects of the medicines in this case were most probably owing to the destruction of acid acrimony, of which there were strong indications in the habit of this patient.

In such cases it is most prudent to begin with small doses, for in full doses I have known this medicine brought into discredit, and laid aside at the first trial, in consequence of the irritation it caused by increasing the quantity of urine, an effect

* He has since received farther relief from the application of caustic by Mr. Home, according to the method lately published by him.

which

which it sometimes has. The dose is from fifteen to thirty drops, thrice a day. The benefit arising from these medicines usually appears in a few days, but they must be continued from six weeks to three months to have a permanent effect.

II. The next complaints I have to mention, in which I have observed these remedies to be useful, are certain cases of indigestion, especially those in which acidity is the prevailing symptom. In these I have had the most unequivocal proofs of the good effects of Lime Water and pure Alkalies, the former being given in doses from three to four ounces, twice or thrice a day, and the latter from twenty to thirty drops, as often, diluted in a watery vehicle. I have observed a manifest superiority of the pure mineral Alkali or Natron over the pure vegetable Alkali, or Kali, in stomach complaints, and I should think the former deserves a place in our dispensaries.

In reasoning upon these facts, the most obvious idea that presents itself is, that these medicines act by destroying acidity. But on account of their acrimony, the quantity in which they can be taken is so small, that this absorbing power, with regard to the
general

mach of animals. This property in ruminating animals is confined to the digesting stomach, and is found not only in the stomachs of those recently killed, but of those which have been preserved in pickle as in that of a calf which has been cured for rennet. There can be no doubt but the power which this possesses of coagulating milk is part of the digestive faculty inherent in it: and though this faculty in its full extent has been abundantly proved by Dr. Fordyce * to depend upon the living power, yet it is evident, from the stomach of the calf retaining the coagulating property so long, that this is an effect purely chemical, that is, consisting in the mutual action of dead matter upon dead matter. It would be losing time to pursue these speculations any farther, for the practical conclusions do not at all depend upon them, but upon observation and experience.

The only other remark I know of, relating to this part of the subject, is, that Lime Water is sometimes eminently useful in chronic dysenteries of the lenteric kind, and it probably acts by correcting the func-

* See Treatise on the Digestion of Food. London, 1791.

general contents of the stomach, is too inconsiderable to account for the effect; and if it depended upon this alone, the mild alkalies, magnesia, and the common calcareous earth, ought to have much greater power, as they can be taken in much greater quantities. This however is not the case, except in some of the complaints of children depending on acidity, which are cured by large doses of the earthy absorbents. But in the chronic diseases of the stomach in adults, these have merely a palliative effect, while the pure Alkalies and Lime Water have an evident effect in correcting the function itself of the stomach, and thereby producing permanent relief.

But though these medicines cannot be administered in sufficient quantity to have a sensible effect on the contents of the stomach, consisting of the *ingesta* rendered acid by vitiated digestion, yet it is conceivable, and even highly probable, that they may act on what may be called the *gastric acid*, which may be secreted in so concentrated a state, or in such quantity, as to constitute disease. I have satisfied myself that there is such an acid, by applying the usual tests to the inner surface of the stomach

tions of the stomach. This is no new remark of mine, but I can testify the truth of it from my own experience.

III. There is another class of disorders in which the good effects of Lime Water and pure Alkalies have not hitherto, in so far as I know, been sufficiently attended to. These are certain cutaneous complaints, particularly those affecting the face, and commonly called *gutta rosea*. I do not know whether it is conformable to the observation of others, but I have found cutaneous complaints so frequently connected with calculous complaints, that I cannot help inferring that the same constitutions are liable to both. This is more particularly the case with those impetiginous affections which depend on an hereditary constitution, and incident to what is called a scorbutic habit.

Cutaneous complaints are still oftener connected with complaints of the stomach. This is most commonly observable in eruptions of the face, which very usually co-exist or alternate with indigestion. It is also very common to observe more general desquedations of the skin connected with hypochondriasis and hæmorrhoids, both of which may generally be considered as impetiginous
af-

affections of the intestines. But in so far as I have observed, it is in those cases more particularly which affect the face, that the Lime Water and Alkalies are beneficial; and it seems probable, that these medicines act upon one and the same principle in the good effect they produce, both in the external and internal complaints.

All the excretions of the skin which I have tried by the usual tests have shewn an acid character. Whether this has any connection with the operation of the medicines I will not pretend to determine; but in some cases of eruptions I have employed the Lime Water as a wash with manifest good effects, so as to have effected a cure after mercurial and sulphurous applications had failed.

There are certain species of boils not included in the description of cutaneous disorders which I have here in view, but in which I have heard the late celebrated Mr. Hunter say, that he had observed the use of pure vegetable Alkali to be followed with relief in such a number of cases, as to render its efficacy undeniable; and he first discovered this by observing boils to be cured in a case, in which this Alkali was given for a calculous complaint.

The

The only other disease, so far as I know, in which the medicines in question have been supposed to be beneficial, is the gout, and next to calculous complaints their virtues in this, I believe, have been most generally allowed. But as it was my intention to point out only such effects as have been less commonly attended to, I shall not enlarge upon this, and shall only remark, that in some cases they seemed to protract the intervals of this disease, while in others my expectations were entirely disappointed.

X. *An Account of a singular Disease in the great Intestines.* By M. BAILLIE, M. D.

F.R.S. Read April 5, 1796.

A VERY singular morbid appearance of the great Intestines having lately fallen under my observation, I have taken the liberty of communicating an account of it to this Society. I had no opportunity of seeing the patient when alive, but I have received the following statement of the symptoms from Sir Walter Farquhar, Mr. Chilver, surgeon, and Mr. Thomas, an apothecary at Chelsea, who attended her.

Mrs. R. unmarried, of rather a spare habit, and about fifty years of age, had been very subject to costiveness. Twice in her life she had been attacked with vomiting, violent pain in her stomach and bowels, and great constipation. On both occasions, after the disease was removed, she continued for some time extremely weak.

The attack of the disease which proved fatal,

fatal, began about the first of November, 1795. She had violent pain of the stomach and bowels, more especially on the left side, accompanied with vomiting and obstinate costiveness. Evacuations from the bowels were procured by purgative medicines of considerable power. These stools at first had a foetid offensive smell; but after some time consisted merely of blood, and were very numerous for many days, on some days amounting at least to forty. The blood evacuated from the bowels became at length mixed with a kind of watery fluid exceedingly offensive to the smell, and what seemed to be mucus. There were also some small masses or clots of coagulated blood. About three weeks before her death, she voided a substance, resembling gut, above a yard in length. For ten days before the passing of this substance, and always after that time till she died, she could have no evacuation from the bowels, unless held up nearly in an erect posture. During a great part of the time that the disease lasted, the disposition to vomit was so constant, that she could hardly keep any thing upon her stomach;

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but, at length, this symptom very much subsided, and she was nourished with mutton broth, jellies, coffee, &c. Within fourteen days of her death, the pain in her stomach and bowels also diminished, except on the left side, where it remained without abatement. Towards the end of the complaint, the vomiting returned. She had a succession of cold and hot fits; her body and legs swelled; and she was troubled with hickup and phlegm rising in her throat. What she could take of medicine or nourishment, at this time, excited almost immediately the bowels to an evacuation by stool. This symptom continued for about three days. She was seized with strong convulsions a few hours before her death, and after much suffering expired.

Her pulse during this illness was very frequent, generally above a hundred and twenty; and she had a good deal of heat and thirst. The remedies employed were bleeding, blisters applied to the abdomen, fomentations, the warm bath, purgative medicines and opiates: but they did not afford any considerable relief.

When I first looked at the gut-like substance,

stance, which Sir Walter Farquhar was so obliging as to send for my examination, I thought that it must have been some modification of the coagulable lymph thrown out by the vessels of the inner membrane of the great Intestine; for I did not conceive it possible that it could be a part of the great Intestine itself. Still it appeared to be very different from any lamina formed by the coagulable lymph which I had ever observed. I therefore examined it, with a good deal of attention, and was soon convinced that it was really a portion of the colon. I observed clearly the inner membrane, having very much the same appearance which it has commonly in that Intestine. I then traced the circular muscular fibres with the most satisfactory degree of distinctness. In some places the peritonæal coat was preserved; in others, the appendiculæ epiploicæ, and a part of the longitudinal bands were distinctly to be seen. All these circumstances struck me with an irresistible conviction, that the substance which had passed could be nothing else than a considerable portion of the great Intestine itself. No modification of coagulable lymph

formed upon the inside of the Intestine could exhibit this distinct and peculiar organization of structure, which belongs only to one part of the Intestinal canal.

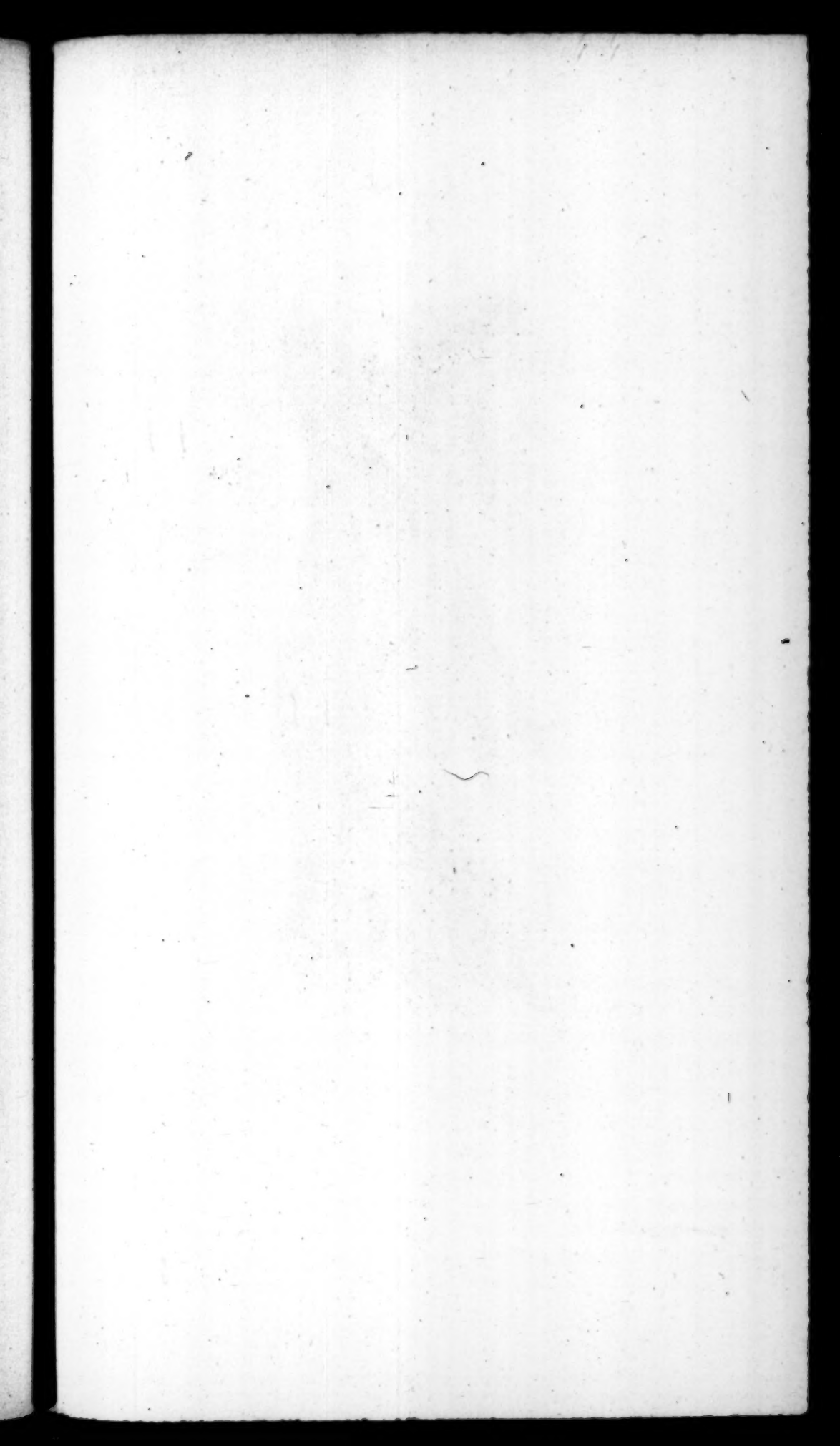
As leave could not be obtained to examine the body after death, notwithstanding the most pressing intreaties, we cannot tell what change had taken place in the cavity of the abdomen; and it is hazardous to indulge in conjecture. It is not unreasonable however to suppose, that a violent inflammation had taken place in a considerable part of the great Intestine, which had thereby lost its living principle; and that during this inflammation, a layer of coagulable lymph was formed round the gut, and inclosed it as a case. This coagulable lymph would soon be converted into a sort of membrane, and the dead part of the gut would be thrown off. In this way, a passage would still remain for the evacuation of the contents of the Intestines; but as there was no muscular power in this newly formed canal, the patient could have no stool except in an erect posture, probably by the action of the abdominal muscles.

In

In Dr. Hunter's collection of anatomical preparations, there is a substance very much resembling gut, which had been discharged during a violent purging; and which I have examined very lately with attention. It is about six inches in length, and is not so distinctly marked in its organization as that described in the foregoing case; but upon attentively looking at it, there can be discerned some muscular fibres, the remains of the appendiculæ epiploicæ, and a part of one of the longitudinal bands, which are the circumstances characterizing the structure of the great Intestines. Accompanying it, there is a considerable portion of the inner membrane of the Intestine, covered with a layer of coagulable lymph, which had been separated and discharged by stool. The person from whom this portion of gut passed away lived two years afterwards; but the particulars of his case have not come to my knowledge.

The case which makes the subject of this paper, and the other at which I have hinted, cannot be said to lead to any immediate useful application in practice.

They are not however altogether unimportant. They shew the wonderful resources of the animal œconomy, and prove that a person can continue to live for three weeks after a very large portion of the great Intestines has been lost; and that a person can continue to live for two years, and therefore probably for a much longer time after the loss of at least six inches of that bowel. This is a conclusion to which the mind could never have been led by reasoning, a priori. Any person, I am persuaded, perfectly acquainted with physiology and pathology as far as they are at present known, would consider it impossible that so large and so important a part of the human body could have been lost, and that still provision should have been made by the powers of the animal œconomy for continuing the functions of life during so long a period. I have searched into those books in which it was most likely to find any case similar to that which has been related in this paper, but I have met with none which bears the smallest analogy to it,



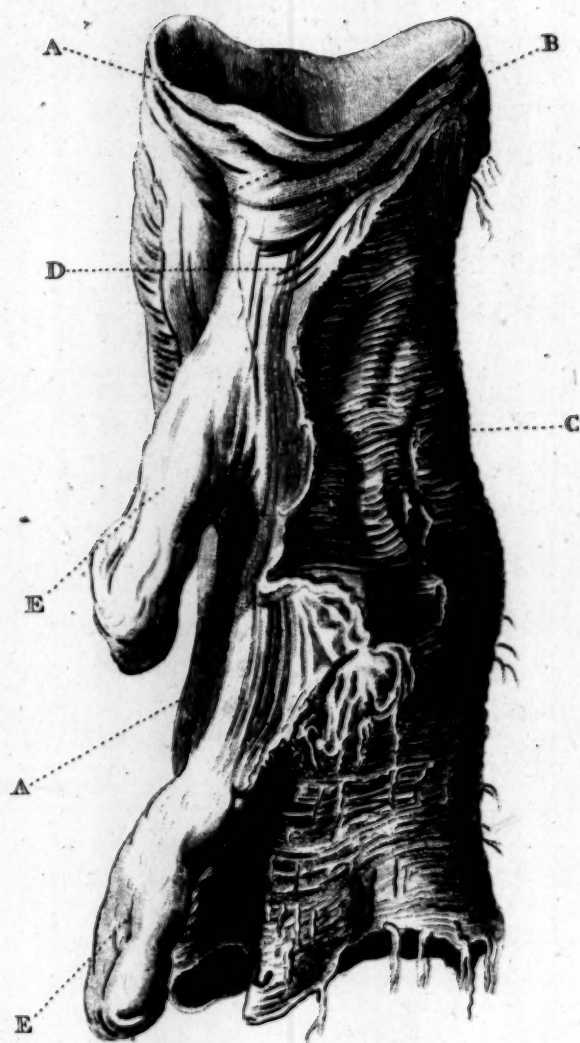


PLATE I.

No. 10.

- A A. A part of the colon which was discharged by purging.
 B. A part of the peritoneal coat.
 C. A part of the circular-muscular fibres laid bare.
 D. A part of one of the longitudinal bands.
 E E. Two appendiculæ epiploicæ.

XI. *An Account of an uncommon Tumour, formed in one of the Axillary Nerves.* By E. HOME, Esq. F. R. S. Read September 6, 1796.

TUMOURS are very different in their nature, and are met with in almost every part of the body. To give an account of their varieties, would therefore be a subject of considerable extent. This, however, in the present state of our knowledge becomes wholly unnecessary, as the greater part of them have been very well described, and are very generally known.

To the practical surgeon, it is in many cases of more consequence to be acquainted with the parts in which the Tumour is enclosed, and the connection it has with those parts, than any thing respecting the Tumour itself; as without this knowledge he is unable to decide respecting the safety of the operation required for its removal, or to perform it with the necessary dexterity.

There is a particular species of Tumour
met

met with in the neck, and probably in other situations, which is contained in a cyst, but is only loosely attached to it; yet generally over the whole surface by blood vessels and cellular membrane. The Tumour is of a yellowish white colour, and resembles somewhat in its appearance and consistence the human kidney. Its internal structure is sometimes the same throughout; but where it has been allowed to increase to a considerable size, some parts appear more compact than the rest.

This species of Tumour must have been frequently met with. It is, therefore, unnecessary to take up more time in giving a particular description of it. The reason for mentioning it here is, to compare it with an incysted Tumour of a rarer kind; and to point out, that in its removal it is unnecessary to do more than divide the membranous covering, and disengage it by the finger. The parts will afterwards heal very kindly, and may be united by the first intention, if proper means are taken for that purpose. This I am enabled to state from repeated experience.

I have lately met with a Tumour inclosed

closed in a nerve, so very similar both in external appearance and internal structure to that just described, that I must consider them as differing only in situation. This Tumour from its connection with the nerve produces symptoms peculiar to itself. It may, therefore, be considered in this point of view as a distinct disease; and as it is a very uncommon one, I shall give a particular description of the cases which I have met with, and an account of the operation for its removal.

A lady, twenty years of age, had a Tumour on the outside of the biceps muscle of the right arm, just below the middle. It was of the size of a small pullet's egg, of an elliptical form, and moveable in the surrounding parts, but principally in a lateral direction. It was extremely painful when any thing pressed against it, which made her very careful in defending it from external accident. It had been several years in arriving at this size, but was now increasing more rapidly, which induced her to submit to have it removed. The operation was performed by Mr. Hunter, in which I assisted him. In the
ope-

operation, handling the tumour, or moving it from its place, gave the most excruciating pain. When the Tumour was fully exposed, it had a smooth shining external surface, and terminated at its *upper and lower* ends in a strong white chord, which proved to be the musculo-cutaneous nerve. Upon cutting into the Tumour, it was discovered to be inclosed in the nerve. This discovery was not made till the Tumour had been every where laterally dissected from the surrounding parts. It was, therefore, thought prudent to remove the whole by dividing the nerve at the two ends of the Tumour. The artery belonging to the nerve bled so freely, that it became necessary to apply a ligature on both the cut ends of the nerve, as the artery itself could not be got at. An attempt was made to heal the wound by the first intention, which did not succeed; but it got well as soon as wounds of that size usually do, by suppuration and granulation. The patient lost the use of her forefinger and thumb, and there was a numbness in all the parts supplied by that nerve. The skin which covered them was unusually rough

rough and dry, and the cuticle came off in small scales. Before the operation, the pain was not confined to the Tumour, but extended to all these parts. On examining the Tumour, it was found that three inches in length of the nerve had been removed; that it was divided into two portions, each of them very much flattened, and passing over two opposite sides of the Tumour. There was also a nervous expansion not thicker than a common membrane, which completely invested the whole of the Tumour; and when that was divided, it could be readily separated every where, except at the *extremities*, where the connection was somewhat stronger.

When the Tumour was divided, and the cut surface accurately examined, it had the appearance, in the centre, of serpentine nervous fibres running in the course of the nerve. These were separated from each other, and the interstices filled up with the substance of the Tumour; but that part of the Tumour which was exterior to these fibres had something of a radiated structure.

Peter Coillot, a Frenchman, thirty-five years of age, was admitted a patient under my care in St. George's Hospital, July 13, 1796, with a Tumour, *which was situated in the middle of the hollow, between the two folds of the armpit.* When the arm was hanging down, it projected very little; but when the arm was raised, it became very prominent, that position of the parts bringing the Tumour forward. It admitted of lateral motion, which was, however, very confined, being just sufficient to ascertain that it had no firm connection with the parts behind.

The first symptom which he felt was a darting pain in the fingers of that hand. This came on in July, 1795, and increased from that time; but the Tumour in the armpit was not discovered till June, 1796, and was then as large as a small pullet's egg. When he came into the Hospital, it was more than double that size. The pain he felt in the Tumour and in the arm was very severe. This was very much increased by any pressure against the Tumour.

Its relative situation to the great nerves
and

and blood vessels, its obscure motion, and the uncommon degree of pain which it occasioned, were unfavourable circumstances for an operation. I was therefore induced to try a variety of means to relieve the symptoms, but these proving ineffectual, and the pain becoming worse, the removal of the Tumour seemed to be the only means left that could give him a chance of getting well. To this the man most cheerfully submitted, as he declared that his present sufferings were insupportable.

During the operation, the arm was raised as high as possible to bring the Tumour fully into view. Upon dividing the skin and the cellular membrane, the first object which presented itself was the axillary vein stretched over the anterior surface of the Tumour. This was drawn to one side, and retained in that situation. When the Tumour was laid bare, it was found to have a smooth external surface, and the end next to the arm terminated in a strong white chord. When this was pulled, it did not give pain in the part itself, but the arm felt over stretched, *and* gave him

him the greatest uneasiness. This circumstance brought to my recollection the case of the young lady above related, and led me to consider this to be similar to it. I therefore cut through the external covering of the Tumour, which was only a thin membrane, and dissected off a considerable portion of it. This enabled me with the finger to detach the remainder of the Tumour from its covering, and entirely to disengage it, upon which it was immediately expelled by the action of the surrounding muscles. No hæmorrhage ensued, and the parts were superficially dressed. The patient immediately after the operation felt relieved from the distressing symptoms he before complained of.

The Tumour was of a yellowish white colour, about three inches and half long, two inches thick, and of an oval form. When cut through, it was found to consist of a whitish very firm substance; in the centre of which there was a very obscure fibrous structure; and towards the outer surface the texture was indistinctly radiated. The day after the operation, the

the patient was free from pain, and could move his fingers without uneasiness. He continued going on well till the fourth day, when he lost his appetite, had an unusual heat in his skin, and his *pulse exceeded its natural frequency*. On the fifth day he was nearly in the same state; on the sixth his pulse was *quick*, and had a sharpness in the stroke. His skin felt hotter than before, and he had a præternatural thirst; his spirits were depressed, and he felt persuaded that he should not recover. On the next day in the forenoon he died.

On examining the parts after death, the Tumour was found to have been incased in one of the large nerves which form the axillary plexus: the principal substance of the nerve passed along the posterior surface of the Tumour. There were also some other branches much flattened, and as it were imbedded in the nervous expansion surrounding the Tumour. The cyst was now much contracted, and more than four times thicker than at the time of the operation. *In consequence of having been inflamed*, the cavity was lined with coagulated lymph, and almost

almost filled with coagulated blood, as suppuration had not compleatly taken place. The inflammation and swelling had extended some way into the surrounding parts, which were also consolidated into one mass, and with difficulty separated by dissection.

The other parts of the body were found in a natural state, so that there was no evident cause of death but what arose from a considerable degree of inflammation upon the substance of a large nerve for three inches in length, which also affected the other nerves of the plexus.

A similar Tumour had formed in one of the other nerves, but was much smaller in size. It lay directly between the axillary artery and the Tumour which had been removed. In this situation it prevented the pulsation of that artery from being felt during the time of the operation, which I was before at a loss to account for.

The structure of this Tumour was exactly similar to that from the arm of the young lady, except that the nervous fibres in the centre were rather more distinctly

seen, the spiral direction of the fibres being readily distinguished by the naked eye; in other respects, it was exactly the same. The want of distinctness in those of the larger Tumour may therefore be reasonably supposed to be the effect of the increase of size by which they were rendered obscure.

From these cases we are enabled to ascertain the symptoms peculiar to Tumours in the substance of nerves, and to form a judgment respecting the mode of removing them.

They may be distinguished from other Tumours by a pain which is felt in the direction of the Tumour, and in the part beyond it, even at the time when the Tumour itself is moveable laterally in the surrounding parts. They may be also distinguished by the motion of the Tumour, being chiefly in a lateral direction, but not in the direction of the nerve to any extent; and by the attempt to produce this longitudinal motion, being attended with considerable pain.

In the removal of such Tumours, we find that so far as we are justified in drawing

conclusions from two instances, the taking away three inches of a nerve is productive of less violent effects than are occasioned by inflammation and suppuration in the substance of the nerve for an equal extent.

The inflammation of a nerve like that of a tendon, appears to affect the general system in a greater degree than would be expected, by a man unacquainted with pathology, from the little severity of the symptoms, or sensation in the part affected.

Mediterranean, Nov. 10, 1796.

XII. On the Use of the Application of Gastric Juice to Sores. By JOHN HARNESS, M. D. Physician to the Fleet. Read January 3, 1797.

Mr. Thomas Corben, Boatswain of his Majesty's ship Egmont, was, on the 31st of July, 1796, received into the Dolphin hospital ship, in consequence of a very bad ulcer of the right leg, which was fully six inches in length and four in breadth. The surrounding integuments were detached for some considerable way, and their margin, with very much the greater portion of the surface of the ulcer, was in a sphacelated state. The matter discharged was so extremely acrid, as to excoriate every part which it touched, and had insinuated itself through the whole length of the interstices of the gastrocnemius and soleus muscles. From between these muscles, which were detached from the bone nearly the whole length of the ulcer, a very large quantity of a most offensive matter was discharged, a

con-

considerable portion of which lodged in a cyst formed by the detached integuments on the posterior and inferior parts of the leg.

There was a very great tension the whole length of the extremity.—The general health was much impaired.

Having, in the course of a long and extensive practice, been too frequently a witness to the inefficacy of the applications hitherto made use of in the navy in the treatment of scorbutic ulcers (viz. cytric acid, bark, myrrh, rhubarb, and opium, separately or variously combined) and more particularly in warm climates, where sphacelus and erosions have taken place in any considerable degree, to which every seaman is peculiarly liable; I was induced, from the very unfavourable appearance of the case above related, to have recourse, with the concurrence of Mr. Gray, surgeon of the hospital ship, to the *Gastric Fluid of graminivorous animals*, which I knew could be readily obtained from the bullocks and sheep killed daily for the use of the fleet. From a bullock killed in the evening, nearly three pints of the juice were obtained, with

part of which the surface of the ulcer was washed, as well as all the sinuses, by injecting the fluid into them in different directions by a syringe, with a long and slender tube: Superficial dressings of lint were then applied, and particular attention was paid to prevent, by compresses and bandages, a further insinuation of matter, as well as to preserve the parts in contact, as far as their diseased state would admit of, that every advantage might be derived from the adhesive inflammation which I expected the remedy to excite. The above means were pursued night and morning. On removing the dressings upon the third day, the whole of the sphacelated parts was thrown off, which exposed a large portion of the tibia in two different places, to which pledgets of lint dipped in the fluid, were applied, which not only appeared to prevent the injuries usually attendant on those cases (viz. discolouration and exfoliation) but on the contrary, in the course of eight days, the parts thus exposed were entirely covered by new granulations, and at the expiration of fourteen days, all the soft parts were perfectly reunited, and the surface of the ulcer reduced

reduced to a sore of about two inches and a half in diameter, with its granulations small, and compact, and of a beautiful florid colour. It is at present perfectly healed, and the patient, although a very lusty man, enabled, by the assistance of an elastic bandage, to attend to the duties of the ship.

After the three first dressings, the Gastric Fluid of sheep only was used, not being able, from the ship being at sea, to obtain more from bullocks. The Fluid, if possible, should be procured fresh every day.

To remedy his general ill health, an aperient medicine was first given; after which he took half a drachm of bark in two ounces of the decoction every six hours, with directions for him to make use of as many lemons and onions in the course of the day as his stomach would easily bear. It was astonishing to observe with what rapidity he regained his strength after the sphacelated parts were thrown off.

I have since had the pleasure of finding the application of the Gastric Fluid succeed in more than a hundred cases of sphacelus, and the testimonies given of its peculiar good effects in these cases by Mr. Jones, surgeon

of the Naval Hospital at Bastia, and by Messrs Bead and Buck, two of his principal assistants, convince me of the importance of making its efficacy generally known.

P. S. I have at present a patient in the Dolphin, a seaman belonging to the Barfleur, Vice-Admiral Waldegrave, who, from being confined to his bed by typhus fever, became excoriated in three different places, the whole of which terminated in extensive mortifications; the sloughs of which are entirely removed by the Gastric Fluid, and the patient sufficiently recovered to walk about.

JOHN HARNESS, M. D.

Physician to the Fleet.

XIII, *The Case of a Person who was shot through the Lungs and survived for thirty-two Years; with an Account of the Appearance of the Contents of the Thorax after Death.* By EVERARD HOME, Esq. F. R. S.

IT has been proved by a number of cases, that wounds made by musket-balls through the lungs are not necessarily fatal; and there are many persons now alive who have met with accidents of this kind. There are, however, I believe, no cases upon record in which there was an opportunity, many years after the recovery, of examining accurately the state of the lungs of such persons after death, so as to explain the mode of recovery. From the want of such knowledge, many different conjectures have been formed upon this subject.

The late Mr. Hunter had seen several persons who had recovered after receiving gunshot wounds through the lungs, and was very desirous of being acquainted with the manner in which the parts are re-established; he instituted different experiments upon animals for
this

this purpose, and always found where an opening had been made by a cutting instrument into the cavity of the chest, that the lungs afterwards adhered to the ribs at the wounded part; he therefore concluded, that the same thing happened in cases of gun-shot wounds; it will however appear from the following case, that this by no means necessarily takes place,

An officer in the British army, thirty-one years of age, was shot through the chest, the ball entered on the left side between the third and fourth rib, near the point of the shoulder, It passed obliquely upwards, and came out on the opposite side between the second and third rib, That the lungs were wounded was very soon ascertained by an hæmorrhage from the mouth, which was so profuse as to endanger his life.

He gradually recovered from the immediate effects of the wound, but it was two or three years before he could be said to be restored to health. During the remainder of his life he was very subject to inflammation of his lungs on catching cold, and at those times had a great deal of pain,
and

and a very considerable expectoration. He died in the sixty-fourth year of his age, thirty-two years after having received the wound through his lungs.

Upon examining the Thorax after death, the following appearances were taken notice of:

On removing the sternum, and exposing the lungs to view, their external surface was found to be in a natural healthy state; there were some adhesions to the ribs, but not more than frequently occur at that advanced age. There was a small quantity of water in the cavities of the chest, but not sufficient to be considered in any way connected with former diseases.

In searching for the course of the ball, the spot where it entered the lungs of the left side was very readily discovered by the remains of a small cicatrix, the membrane at that part being thinner than common, and having a puckered appearance which terminated in a central point. This part of the lungs had not the slightest adhesion to the pleura, but was in its natural detached state.

The course of the ball through the substance

stance of the lungs was readily traced by dissection, for an induration of the substance of the lungs was formed wherever it had passed; this was best seen by making transverse sections of this thickened part. The appearance of the lungs in the right side was of the same kind, but in a less degree.

The course of the ball was through the upper lobe of both lungs, at nearly the distance of two inches and an half from the highest part of them, where it entered the left lungs. The portion of lungs above the course of the ball did not contain air, but the cells were filled with serum, so that it was more dense than natural, and sunk in water; but this part was not in any degree shrunk or contracted. It had no communication with the branches of the bronchea, the adhesive inflammation consequent to the wound having consolidated all the parts above the line through which it passed.

The internal membrane of the trachea, and even that of the smaller branches of the bronchea were universally vascular, and the edges of the lungs were in some parts emphysematous. These appearances were
probably

probably consequences of an irritable state of the lungs, the secondary effects of having been wounded. The heart was more than double its natural size, and in a flaccid state.

The valvulae mitrales were thickened, opaque, and white.

The femilunar valves of the aorta were diseased in a very unusual manner. One of them was destroyed by ulceration, its margin excepted; the edges of the ulcer were irregular, and the remains of the valve being perforated, formed a narrow ring. The same disease had taken place in another of them, but the ulcer, which was nearly in the middle of the valve, was not so large, the disease being apparently in a more recent stage. The third valve was in a natural state.

The patient, for some time before his death, had a great degree of irregularity in the pulse, which may be readily accounted for by this disease in the valves of the aorta. It also accounts for the heart itself, particularly the right ventricle having increased so much beyond its usual size.

XIV. *An Account of the Case of a Man who had no evacuation from the Bowels for nearly fifteen Weeks before his death.* By M. BAILLIE, M. D. F. R. S. Read September 5, 1797.

ROBERT HERTSELL, a shoemaker, aged 30, was of a costive habit, but had otherwise enjoyed good health. He used generally to have three or four stools in the week till within eight months of his death. From that period he became much more costive, having a stool only once in a week, or sometimes once in a fortnight. When he passed a stool he felt some pain at the lower part of the belly. The costiveness still went on increasing, so that he had no evacuation by the bowels for nearly fifteen weeks before he died*. In this state his belly began to swell, and at length arrived at an enormous size. The distension of the belly seemed principally to be occasioned by wind which had accumulated in the bowels. There was a sudden

* The last evacuation by the bowels was on the 21st of February, and he died on the 4th of June.

reaction of the integuments of the belly upon removing from them the pressure of the fingers, as in a common bladder filled with air; and the patient often passed a considerable quantity of wind through the oesophagus. No wind however was discharged by the rectum. He commonly complained of a good deal of pain about the navel, and sometimes over the whole abdomen. During the latter part of his illness, when the abdomen was swelled to a very large size, the peristaltic motion of the bowels could be distinctly seen through the parietes of the abdomen, and the bowels appeared evidently very much distended.

The patient's appetite for food was, through the greater part of his illness, as good as in health; but within a fortnight of his death it failed him. He took then very little, most commonly a small quantity of wine or porter, with some toasted bread; but these were often rejected by vomiting, about a quarter of an hour after they had been swallowed.

His pulse was generally about 84 or 86, was rather full, but not hard. When he felt any considerable increase of pain in the belly,

belly, it rose to above 100. Towards the latter part of his illness, the pulse was often above 100, and sometimes felt a little hard. During the whole of his illness he breathed with tolerable ease, notwithstanding the great distension of his belly, and he passed his urine without difficulty.

A short time before his death he became extremely emaciated in his face, and within the last 24 hours he complained of a very severe pain in the region of the stomach. During a part of his illness he was a patient under my care at St. George's Hospital. He was admitted March 8, 1797, and was discharged by his own desire on the 24th of the same month, having received no relief while there.

Whilst he stayed in the hospital, the strongest purgative medicines were administered, both by the mouth, and in the form of glyster, but without the smallest success. He took a bolus, containing five grains of calomel, and ten grains of gamboge, but without its being followed even by any attempt at an evacuation by stool. Twenty grains of calomel, and 30 grains of jallap were also given, but without any effect.

An

An enema was administered, containing two drachms of gamboge, but it was very soon evacuated without being accompanied with any fæces. Another was administered on the following day, containing three drachms of gamboge, but without the desired effect. Tobacco smoke was also injected in vain: He was directed to take a pill, containing four grains of Elaterium, but this made him sick without producing any evacuation by stool. Shocks of electricity were sent through the abdomen for several days. Cold water was dashed upon his feet, but both of these means were ineffectual. He wished to try the effect of swallowing some crude quicksilver, as he thought he had once received some temporary ease from it before he was admitted into the hospital *. Accordingly he swallowed three ounces of quicksilver, but it was retained, no part of it having passed by the anus. Some globules of quick-

* He swallowed, at two separate times, two ounces of crude quicksilver for a dose, by the direction of Dr. Clough, before he came to St. George's hospital. The quicksilver neither passed itself; nor produced any evacuation of fæces. He took also, by the same advice, some strong purgative medicines, but without effect.

silver appeared mixed with the fæces, upon examining the body after death.

Having received no benefit from various tryals during his stay in St. George's hospital, he desired to be discharged. As his case was very singular, I visited him occasionally at his own house, and he was very frequently visited by a diligent pupil* of the hospital, who gave me an accurate account of the state in which he found him. After his leaving the hospital nothing was attempted for the patient's relief by my direction, except that a scoop was desired to be introduced into the rectum, in order to break down the fæces mechanically, if they should be found within reach, and in that way to remove them. Upon a candle being introduced into the rectum, it was discovered to be empty: the scoop therefore was not introduced. At length all trials were given up, his belly became more swelled, his feelings more distressing, and his strength more exhausted, till he sunk under the violence of the disease, and died on the 4th of June. On the evening of the

* Mr. Bullock.

following day I examined his body in the presence of Dr. Marshall, Dr. Clough, and some medical students.

When the abdomen was laid open, the stomach was found to be flaccid, but was healthy in its structure. The small intestines, except the duodenum, were very much distended, but still more so were the great intestines, which seemed to be above six inches in their transverse diameter. Upon the surface of both the small and the great intestines, were observed little patches and narrow bands of a florid red colour, which were composed of a great croud of very minute blood-vessels. The small intestines, except the duodenum, were filled with air; the great intestines were filled partly with air, and partly with fæces. The fæces were accumulated principally at the lower end of the sigmoid flexure of the colon, and were gradually less in quantity to the cæcum. There were no fæces in the small intestines, except at the very lower end of the ilium, and the small quantity which was found there might have been forced through the valve of the colon by the pressure of the hand against the cæcum

in examining the body. The faeces were properly coloured by bile, were of the consistence of soft mortar, and although they had been so long retained in the intestines, were not more foetid than usual. The great intestines, where they were so much distended, had their muscular coat a good deal thickened, and the longitudinal bands were at least twice as thick and broad as in the natural state. At the lower part of the sigmoid flexure of the colon, there was a very narrow stricture, accompanied with an ulcer, which was partly in the situation of the stricture and partly in the gut immediately above it. The stricture was so narrow as hardly to allow more than a large goose-quill to pass through it. The rectum under the stricture was found.

The liver and the gall-bladder were in a natural state, but the other abdominal viscera could not well be examined on account of the distended state of the bowels. They were probably healthy, as no symptom occurred during life which led to any suspicion of disease in them.

The cavity of the thorax was a good deal diminished in its size in consequence of

the distended state of the abdomen, but the viscera in it were free from disease.

In reflecting upon this singular case, the following observations naturally arise. The stricture at the beginning of the rectum is to be considered as the cause of all the symptoms. It was so narrow as to prevent both the fæces and air from passing into the rectum. The rectum being empty, the urinary bladder was allowed to enlarge itself sufficiently for the ordinary accumulation of the urine, and the patient neither made water with difficulty, nor was obliged to void it frequently.

This case shews a very strong power in the system of accommodating itself for a great length of time, to circumstances which appear almost incompatible with the continuance of life. As the fæces could not be evacuated on account of the stricture, the great intestines became larger in proportion to the accumulation of the fæces. As the great intestines were frequently exerting a strong peristaltic motion, in order to evacuate the fæces, the muscular coat was thereby thickened and rendered stronger, so as to become in some degree proportioned

to the difficulty in expelling them. The stricture however was too narrow for these efforts to overcome the difficulty.

The smell of the fæces was not more disagreeable than is usual in the sound state of the bowels, and they were not putrid. This probably took place in consequence of their being excluded from the air.

The stomach retained its healthy functions till within about a fortnight of the patient's death, and this enabled him to support life for so long a time under so formidable a disease.

I have not heard of any instance in which a person continued to live for so great a length of time without any evacuation of the fæces. I thought therefore that an account of this case might not be unworthy of the notice of the Society from its singularity, more especially as the facts are undoubted, and the examination of the body after death, explains in a satisfactory manner the symptoms which took place during life,

P. S. Since this paper was written, I have received, through Mr. Home, an account of a case similar to it, in a man aged 57; but

but the length of time in which the patient had no evacuation by the bowels before his death, was only 20 days. When the abdomen was examined after death, a stricture was found at the upper part of the rectum, which was so tight as to seem as if the intestine had been drawn together by a piece of packthread. The colon was a good deal distended with fæces, and the small intestines, as high up as the duodenum, were also somewhat distended, probably with air. There was no unusual distension in the duodenum and the stomach, but they seemed in every respect to be in their natural state.

XV. *A Case of Rupture of the Uterus, from which the Woman recovered.* By THOMAS HADEN, Surgeon, at Derby; communicated by Dr. CLARKE. Read October 3, 1797.

DEAR SIR,

RUPTURES of the Uterus may be reckoned amongst the most fatal cases which occur in midwifery. The general bad termination of them has led some practitioners to consider all attempts towards preserving the life of the woman as unlikely to be efficacious. It has therefore been the object of many practitioners to endeavour to save the child, the mother's state being considered as desperate.

Ruptures, or Lacerations of the Uterus, are, with respect to the child, of two kinds. One, where the child either in part, or wholly, has passed into the cavity of the abdomen. The other, where the Uterus has sustained the same injury, but the child has still remained in its cavity. All those
symp-

symptoms which depend upon the injury suffered by the Uterus, will be the same in both cases, and they are either such as arise from the violence done to it, or from the hæmorrhage occasioned by the laceration, or from other parts being affected in consequence of the injury to the Uterus.

Accordingly, independently of the passage of the child into the cavity of the abdomen, it is found that when the Uterus is ruptured, the immediate consequence, or attendant circumstance upon the injury, is a sudden sensation of violent pain in the part. Next, the labour-pains, though perhaps violent before, cease suddenly: frequently there is hæmorrhage, but this symptom depends on the vascularity and extent of the part ruptured, and the situation of the child, because there may be, and often is, a great internal effusion of blood without any external sign of it. Faintness, with debility of the pulse, paleness of the skin, and general failure of the powers of the body succeed.

Besides all these symptoms, there is another which seldom fails to accompany this disorder.

disease, viz, a vomiting of a dark brown, or chocolate-coloured matter, which appears immediately, or in a very short time after the accident.

It may, I think, be affirmed, that all these symptoms in labour never arise in one woman, except from this cause, and therefore where all these are present, even though the child may still remain in the Uterus, we are as fairly warranted in believing that there is a Rupture of the Uterus, as a physician, in a case of inflammation of the pleura, would be, from the usual symptoms attending that disease, though he could not see the alteration which had taken place in that membrane.

With such impressions I take the liberty of offering, through your means, the following case to the notice of the Society. I have described it in the shortest manner, and have avoided entering into the detail of the nature of the disease, because the accident has been ably treated of by various authors, who have written on the practice of midwifery, but especially by Dr. Andrew Douglas,

Douglas, in an excellent work on this subject.

I am, dear Sir,

Yours, &c.

THOMAS HADEN.

July 3, 1797.

Vide Observations on the Rupture of the Uterus. By Andrew Douglas, M. D. London, 1718.

Case

Case of Rupture of the Gravid Uterus. By

THOMAS HADEN, Surgeon, at Derby.

A WOMAN, aged 36, had been married twelve years before she became pregnant. At the latter end of January, 1797, she was taken in labour at eleven o'clock in the morning, with her first child. At ten at night, when I saw her, the labour-pains were very strong, and the child's head was in the pelvis, covered by the lower segment of the Uterus, the orifice of which was dilated to the size of a crown-piece.

At three o'clock the next morning, I found the head very little advanced, but the os uteri was more dilated. Her pains, which returned every ten minutes, were extremely violent, and increased both in strength and frequency, till between seven and eight o'clock.

The child notwithstanding made no progress.

At this time she was seized with an excruciating pain, attended with a loud shriek, after which she instantaneously became quite easy,

easy, and fell asleep, which she had not done since the commencement of labour. After sleeping about a quarter of an hour, she complained of great sickness, and immediately vomited a large quantity of a brown-coloured matter. This was repeated eight or ten times, without any return of labour-pains. Her countenance now became cadaverous, her lips pale, her pulse frequent, quick, and small, and her whole appearance justified the most serious apprehensions for her life.

Having no doubt from the concurrence of the symptoms above related that the Uterus was ruptured, I requested a consultation, and suggested the propriety of an immediate delivery by the forceps. This was readily assented to, and in a short time I delivered her of a living child. The placenta afterwards came away without assistance. Immediately after delivery an opiate was given.

In the evening I visited her, and found that she had slept at intervals, but she complained of a constant pain in the belly, even when no pressure was made upon it. Her pulse was 130 in a minute, small, and quick.

quick. An antimonial medicine with opium was ordered to be taken every four hours.

On the following morning the abdomen was much swelled and painful, when even slightly pressed. A purging draught was given, which in the course of the day produced several evacuations. The opium and antimony were continued.

On the next morning, the abdomen was more swelled, and extremely painful. The purging draught was repeated, which operated three or four times.

On the following day she was better in every respect, the pulse was less frequent and stronger; the abdomen was less swelled and less painful, and she continued from that time to amend gradually.

By the end of the 6th day the symptoms of inflammation having subsided, and those of weakness being most urgent, she took decoction of peruvian bark for several days, and by the end of the third week had recovered. She had but little lochial discharge, which, after the third day, was more offensive than usual.

I do not think it necessary to offer many observations on the foregoing case.

My

My principal object in describing it is to add another to the very few instances of recovery from the accident of a ruptured Uterus, and to urge the necessity of immediate delivery in a case where delay must be attended with the worst consequences.

I am aware that there may be some who may wish that the Rupture had been ascertained by introducing the hand into the Uterus, after the delivery of the child. But I am confident that all practical men will be satisfied of its existence from the symptoms described, and I could not have felt myself justified in gratifying my curiosity at the risk of the safety of the patient.

XVI. History of some Cases of Disease in the Brain, with an Account of the Appearances upon examination after Death, and some general Observations on Complaints of the Head. By GILBERT BLANE, M.D.F.R.S. Read October 5, 1797.

It will hardly be questioned that the examination of morbid appearances by dissection after death, constitutes one of the principal grounds of the rational practice of physick in most diseases. The chief defect of most of those already on record, is the want of an accurate history of the previous symptoms and treatment. It is evident, that without this, the account of dissections, though ever so accurate, can be of little real utility, as the practitioner would not otherwise be enabled to recognize similar diseases in the living subject, so as to compare and apply these histories to the cases that may occur to him.

It has been my study, therefore, in the following cases, to give as accurate an history
as

as possible of the previous illness, as well as of the dissection.

CASE OF ANEURISMS OF THE CAROTID ARTERIES.

The subject of this case was a lady who had, till a few years before her death, enjoyed a good state of health, had many children, once three at a birth, at or near the full time. She had always lived very full in point of eating, but had been temperate in drinking. Several of her family had been affected with complaints of the head, particularly apoplexy.

About five years before her death, being then 64 years of age, she was suddenly seized with a fit of giddiness and dimness of sight, succeeded by acute pain in the forehead, which remained for some time. The indistinctness of vision continued for six months.

After this she was at intervals seized with giddiness, head-ach, and imperfect vision. She had a similar attack two years after the first, from which also she recovered to a certain degree. From this period she continued to be subject, from time to time, to

the above-mentioned symptoms as long as she lived.

She for some time saw objects double, but the particular period of this could not be ascertained.

I first visited her on the 9th of March, 1791, about sixteen months before her death. She had some time before this betrayed signs of mental derangement, and I found her at this time evidently maniacal. The symptoms however were so mild that she was sensible of her own situation, frequently talking of it, and lamenting it. She recovered from this attack in three weeks.

In September following she had another attack, more severe, and with more fever. She recovered from this in a month.

In the middle of December following she became insane to a great degree, and this attack seemed to have been brought on, or at least aggravated, by strong emotions of joy and vanity upon her daughter marrying a man of very high rank. She was now violent and unmanageable, sometimes in gay and elevated spirits, at other times depressed, again facetious, and almost always refusing food, drink, and medicines.

She

She continued in this state till the first week of February 1792, when she recovered her senses. On the 4th of June following she became affected with giddiness, redness of the eyes, and numbness of the hands. She expressed herself conscious of approaching *mania*, and it came on with great violence, attended with symptoms of fever. On the 19th, the fever encreased, with apthous sores on the throat. The alienation of mind continued, but evidently partook more of *mania* than feverish delirium. She continued in this state till her death, which happened on the 30th of this month, in the 69th year of her age.

The chief means used for her relief at the different periods of my attendance, were taking away blood from the head, or near it; purgatives, antimonial medicines, abstinence from animal food and fermented liquor, from which she seemed to derive temporary benefit.

Upon examining the body, there was no appearance in the brain itself that could in any way account for the symptoms. There was indeed a greater quantity of fluid than common in the ventricles, and the surface

of it was morbid than it is usually found in a sound state, but in all other cases which have occurred to me of organic affections of the brain proving fatal, except those which are sudden, such as apoplexy, there has been a preternatural quantity of fluid in its ventricles. There were also *spiculæ* of bone in the membrane, forming the *falx*. The inner substance of the *crura cerebri* was of a brown colour, and more tender than natural. The optic nerves were smaller than natural, as if they had been wasted. The *septum lucidum* was more than usually dense.

But the morbid appearance in this case which was so singular, and to which the symptoms of complaint seem chiefly referrible, was two bulks about five-eighths of an inch in diameter, filling up the hollow on each side of the *sella turcica*, which were evidently dilatations of the carotid arteries, and from their being filled with *laminae* of coagulated blood, there could be no doubt of their being aneurisms of these arteries. The dissection was made by Mr. Hunter, assisted by Mr. Home, in the presence of Dr. Jenner and myself, and all concurred in opinion, that these tumors were aneurisms.

The one on the left side was the largest. That on the right side communicated with the cavity of the artery, which was not the case with the other.

It is probable that one of the aneurisms arose five years before her death, occasioning the first attack described, and that the other arose two years afterwards, occasioning the other attack. It is also probable that it was between these two attacks that she saw objects double from the unequal compression on the optic nerves. The brain differs from all the other organs of life in this respect, that it is much affected by partial compression, and compression has a greater effect upon it by its being inclosed in an unyielding bony cavity.

How far this and the other appearances were connected with the mental derangement and other symptoms, and how far, and in what manner, these morbid affections were connected with each other, it is difficult to ascertain. Whether the yielding of the arteries was owing more to a preternatural weakness in their coats, or to a plethora, or to their increased action, to one or all of which the hereditary disposition to disease seems referrible, are questions

which cannot easily be decided, but it is an obvious practical suggestion, that the offspring of this lady should observe strict temperance. This precaution was accordingly given, and in consequence of it her eldest son, who had begun to experience fits of giddiness, has been free from these causes of alarm ever since that time, which is five years, having observed during that time a very strict regimen.

CASE OF A TUMOR FOUND IN THE SITUATION OF THE PINEAL GLAND.

The next case is that of an officer of the navy, who had enjoyed a good state of health through life, and was of temperate habits, but had undergone great fatigue and anxiety in the exercise of his profession. He began to complain in the beginning of February 1794, when thirty-three years of age, of a slight pain, or rather confusion in his head. His appetite became at the same time impaired, and he was more thirsty than natural. These complaints continued rather to increase, but were not so violent as to prevent him from doing his duty as an active

tive officer till the 20th of April following. At that time he was seized with sickness at the stomach, and pain in the balls of both eyes, particularly when he turned them to either side. This was the beginning of a febrile indisposition, which confined him to his bed, or cabin, for a fortnight. The complaint then took the form of a tertian ague, for which he took the Peruvian bark, and soon recovered from it. But the uneasiness of his head continued, and he was so weak and emaciated that he did not undertake his duty till the 26th of May.

A few days after this he was wounded in the celebrated battle of the 1st of June, by a langrish shot, which divided the temporal artery. He lost a great deal of blood, and the bone was injured so that part of it exfoliated some weeks afterwards. The headache was not materially increased by the inflammation attending the wound, although he was in a state of constant fatigue and anxiety from the high and responsible situation which he held. He was not confined a single day in consequence of this wound, and it healed immediately after the exfoliated bone was extracted.

After this he was free from complaint, so as to go to sea upon very active service in several cruises, during which he had only a slight cold now and then, and a temporary head-ach, which was neither acute, nor fixed. He continued to enjoy this state of health till the end of December 1795, when in a cruise on the coast of France, attended with a great deal of harassing duty, he was attacked with a complaint similar to that in spring 1794, but more severe, and attended with watchfulness, flushed face, and inflamed eyes. In this state he went to Bath in the end of January 1796. He was there cupped in the neck, and was frequently purged by administering calomel, and two hours afterwards an infusion of senna, with manna and purging salts. From this treatment he seemed to receive relief, and after leaving Bath, he took the same purgative daily for upwards of three months. After this he was attacked with a severe griping and obstinate costiveness.

Upon recovering from this he was in sufficient health to be able to resume his duty in summer, 1796. He continued well till in a cruise off Brest, in December 1796

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he was again attacked with the pain of the head in a still more severe degree. From this he was never afterwards free, though it fluctuated in point of severity.

I first visited him professionally about the middle of February 1797. During the course of my attendance, I found, together with the symptoms already described, the tongue constantly white, and the pulse from 80 to 90 strokes in a minute. These symptoms continued the same during the remainder of his illness. He was not very sensible to light or noise, but extremely so to motion, which produced a very uneasy sense of jarring in his head. He used frequently to say, that the pain was in a spot in the occiput, to which he put his hand. He said, at other times, that the pain was diffused over the whole head. He all along complained that it was particularly severe upon going to stool.

After being in town for a few days, he went to Tunbridge for the sake of retirement, and nothing remarkable happened till the middle of April, when he was seized with a spitting of blood, after having drank the Tunbridge waters a few times. It is very
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uncertain whether the drinking of these waters had any connexion with that symptom. Upon this he came to town, and the hæmorrhage disappeared after taking for a few days the remedies usual in such cases. He continued to suffer extremely from the pain in his head, which he described as excruciating, and such as he hoped nobody before had ever experienced. The only other symptom worth mentioning, was a small degree of numbness and weakness of the left hand.

In this state he continued without any material change till the end of May, and no relief was obtained. The medical treatment consisted chiefly of blisters and issues, together with the exhibition of valerian, castor, and opiates; saline antimonial, and laxative medicines were occasionally given, with a view to palliate symptoms, and he was cupped on the head. He had entered on a course of calomel in small doses, but had not continued it a sufficient length of time, nor in such quantity as to expect any benefit from it. He never was confined to bed till the 30th of May, and was in possession of his understanding till that

that time. On this day he was suddenly seized in the evening with delirium, which continued with violence for fourteen hours. He then recovered his reason to a certain degree, but during the greater part of the remainder of his life he remained generally in a state of delirium, or stupor. On the 3d day of June he became quite insensible, and died on the next day.

The body was examined next day by Dr. Hunter, Mr. Earle, and myself. The appearances were as follows :

On the left temple, where he had received the wound, there was a small depression, owing to the outer table of the skull being carried off. The skin was drawn down to the bone by a sort of ligamentous substance. The inner table was in no respect injured.

The cranium was more vascular than natural, and also thicker, but irregularly so, being much thicker in some parts than others. The *diploe* appeared obliterated.

The *dura mater* separated very easily from the cranium, and the surface of the bone was somewhat rough, as if from numerous blood-vessels entering it.

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In the lateral ventricle of the brain, there were about three ounces of fluid. The *fornix* and *septum lucidum* were softer in texture than usual. There was a little water in the third ventricle.

The *nates* and *testes* did not appear distinct, and in the situation of the pineal gland was a hard firm tumor, of the size and shape of a nutmeg, about half an inch in diameter. Though in consistence it was like soft cheese, and cut smooth; yet it was not inorganic, for it had blood-vessels in its substance. It lay in the angle, as it were, formed by the two lobes of the *cerebellum* and the protuberances called *nates* and *testes*, a little on one side, that is, towards the right. The substance of the *cerebellum* appeared as if bruised or mashed by it, and the pulpy matter adhered to the tumor; but whether this was merely from proximity, or that they were united in substance, could not, from the softness of the *cerebellum*, be clearly ascertained. There was no pineal gland to be found, but whether this tumor itself was the pineal gland in a diseased state, or that by the size and pressure of the tumor, that small organ was destroyed and obli-

obliterated, must be matter of conjecture. As the tumor did not adhere to that part to which the pineal gland is attached, I am inclined to the latter opinion. The substance of the brain in general was rather of a firmer consistence than it is usually found. In other respects the brain and cerebellum appeared natural and sound.

The thorax being examined, there were numerous tubercles on both sides, such as are found in the beginning of phthisis pulmonalis. There was rather more water than natural in the pericardium, and there was much fat on the heart.

The abdominal viscera were in their natural state.

Under the skin, near the right mamma, was a small tumor, in size and consistence not unlike that which was found in the brain, but of a flat shape, and had a sac: It was softest in the centre.

In reflecting on this case, it can hardly be doubted that the tumor in the brain was the principal and perhaps primary cause of the symptoms, as well as of all the morbid appearances in the head.

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It may be of consequence to enquire, whether if the cause had been known, any mode of treatment more promising of success could have been adopted. It was a disease most probably out of the reach of art, but the only means that occur to me, either from experience or analogy, as advisable, would have been a course of mercury at an early period of the complaint. We know that this can, in other cases, excite an absorption of solid matter deposited in disease, and I have known cases of chronic head-ach, though not of a venereal nature, cured by courses of mercury.

It has appeared in the history of the case, that the symptoms were at times greatly mitigated, and even as it were suspended. The first interval of ease was after the wound, and it is not improbable that the loss of blood, or subsequent suppuration, or both together, had a share in producing this. If this was the case, it suggests the propriety of large local bleedings and issues.

The other interval was after the course of medicine at Bath, and if this is imputable to the mercurial purgatives, it may afford a far-

a farther indication regarding the treatment to those who may hereafter meet with a similar case.

As far as I am conversant with the morbid appearances of the brain, the two preceding cases are very rare, and I have selected them as the most uncommon of any that have occurred to me. No other instance of the first has occurred either to my observation or reading. Of the second there are several specimens among the morbid preparations, in the collection of that celebrated anatomist Dr. William Hunter. These were in the substance of the *cerebrum*. One occurred to myself, of which the following were the most remarkable symptoms and appearances. The patient complained for six months before his death. During the first four months of this time, the symptoms consisted chiefly in long, frequent, and painful spasms of the muscles of the extremities of the left side. He was attacked with a *hemiplegia* of that side two months before his death, and had the usual symptoms of that complaint while he lived. The spasms from that time ceased. Upon inspection of the brain, there was found
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between the lateral ventricle and the parietal bone, an extensive *sinus*, and a round tumor, like what has been described at that extremity of it which was contiguous to the bone. The subject was a middle aged man, much addicted to venery.

In reviewing my notes on the subject of morbid appearances of the brain, the most interesting case besides these, is that of a great thickening and hardness of the skull, with bony protuberances, some of which were blunt and others sharp, proceeding chiefly from the basis of it. The most remarkable symptoms had been temporary failures of memory for some months before death, sudden fits of insensibility, like apoplexy, from time to time, for some weeks before death; and violent convulsions, attended with severe sufferings for some days before that event. During the existence of this disease, there was at intervals an entire freedom from complaint; and it is remarkable, that in various other diseases affecting the structure of vital parts, the functions are at intervals perfect and unimpeded, and symptoms of disorder arise only when the parts are too much

much excited or disturbed, or when the cause of the disease arises to a great height.

It sometimes happens, that the brain is in a diseased state, even that of suppuration, abscess, bloody or serous effusion, without any head-ach.

On the other hand, the ordinary headaches with which people are affected, seem to be seated in the integuments of the head. The seat of that kind called hemi-crania is certainly in these parts; for there is a great tenderness on external pressure; and as there is sometimes an obscure redness of the skin, and a suffusion of the eye, it would appear that the proximate cause is a too great fulness, or *error loci*, in the circulating vessels. This state of the vessels seems to be induced rather by a weakness of the vessels than too great action, for evacuations are in general of more hurt than benefit, and if it is relieved, or cured, it is by remedies of an opposite nature. This complaint, particularly when periodical, is often successfully treated by administering valerian freely, conjoining with it occasionally Peruvian bark and steel.

One of the most common morbid appearances, upon inspecting cases of chronic head-ach, is a thickening of the membranes of the brain, owing probably to a slow inflammation. The cases in which mercury has been found successful, have most probably been of this kind. It seems to act here, as it perhaps does in the venereal disease, by exciting absorption, and in both the most successful method of introducing it is by friction.

There are many cases of head-ach depending on indigestion, and the seat of these seems to be the integuments, as there is generally in such cases a tenderness to the external touch.

One of the principal difficulties in practice is to discriminate those cases of head-ach which depend on the stomach, from those depending on some affection of the part itself; and it may be affirmed in general, that one of the chief causes of ambiguity, in ascertaining the seat and causes of diseases, arises from the mutual consent resulting from the nice dependance of every part and function upon every other part and function, a dependance which in health is essential to the existence and welfare of the

the whole system. In consequence of this connexion, one organ draws another into sufferance, and renders it difficult to ascertain which of them is primarily affected.

There is perhaps no part of morbid anatomy better understood than the connexion of the common hemiplegia with a certain diseased state of the brain, but there are many other affections of this organ of which the history is very defective.

The symptoms attending diseases of the brain are head-ach, vertigo, delirium, spasms, convulsions, palsy, mental derangement, and imbecillity. If the morbid history of the brain were perfect, we should be able, from the history of the various combinations, the duration, and successions of these, to infer the internal change which produces them. The actual state of our knowledge however is such, as to leave us in great doubt and uncertainty on this subject.

From what has been said, it will appear how important it is to connect the histories of diseases with dissections, and how much is wanting in order to exhibit in this, as

well as other branches of morbid anatomy, such a full comparative view of these, as may enable the practitioner, if not to cure or relieve, at least to discriminate and fore-tel the event of disease, which is frequently of the utmost consequence.

XVII. *Observations on Erysipelas.* By WM.
CHARLES WELLS, M. D. F. R. S. Read
January 2, 1798.

It is not, I believe, a common opinion among practitioners of medicine, that Erysipelas is a contagious disease. I shall therefore mention several facts, which seem to me to prove, that it may, sometimes at least, be communicated from one person to another.

On the 30th of May, 1796, I visited William Emerton, of about 60 years of age, who had been afflicted for several days with Erysipelas upon one of his legs. Vesicles were formed upon the inflamed part, and the surface of the skin beneath them was black. His pulse was frequent and feeble, and he was somewhat delirious. A few days afterwards, he was sent to St. Bartholomew's hospital, where I am informed he died.

On the 10th of the next month I was desired to see his widow. I found her labouring under the ordinary symptoms or

what is commonly termed a low fever, when it is likely soon to prove fatal. There were, besides, upon several parts of her skin, irregularly shaped patches, of a bright red colour, and of the size nearly of a half-crown piece; but the parts so affected were not elevated, and gave no pain upon being touched. One of her arms, however, was considerably swelled, and appeared livid; but there was no visible disease of the outer surface of the true skin of the arm, nor was the scarf-skin separated from it. She died in the course of the same day. Now as this woman had been constantly in the same room with her husband, during the time he had been ill at home, and fell sick a few days after his removal, and as her disorder bore some resemblance to Erysipelas, I was induced to think it probable, that Erysipelas might be communicated from one person to another; not recollecting at that time that a similar opinion had been advanced by the late Dr. Cullen, of Edinburgh. My conjecture was soon after confirmed.

On the 8th of August, 1796, I visited, in Vine-street, Clerkenwell, an elderly man named Skelton, who had been attacked
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several days before with Erysipelas of the face. In about a week afterwards he died.

On the 19th of the following month, I saw a Mrs. Dyke, of about 70 years of age, the landlady of the house in which Skelton had been a lodger, and found her labouring under an Erysipelas of her face. I enquired whether any other person had been ill in her house of the same disease, since the death of Skelton, and was told, that his wife had been seized with it a few days after his decease, and had died in about a week. During my attendance upon Mrs. Dyke, an old woman, her nurse, was attacked with the same disorder, and was sent to her parish work-house, where she died. Mrs. Dyke has since informed me, that a young man, the nephew of Skelton, was taken with the disease of which his uncle had died, shortly after visiting him, and survived the attack only a few days; that she herself had been several times with Skelton and his wife during their sickness, and, after their death, had removed some furniture from the room they had occupied to her own apartment; that during the time I attended her, it had been reported

among her neighbours, that the plague was in her house, and that, in consequence, scarcely any person would come near her.

I was now so strongly impressed with the belief, that Erysipelas may be contracted by contagion, that being desired in the following December to visit a Mrs. Hunter, of Eyre-street-hill, and finding her face affected with that disease, one of my first questions to her was, whether she had been lately near any sick person. She answered, that about ten days before she had been for some time at the bed-side of a female friend, who had the St. Anthony's fire in her face, and that her friend having died a few hours after, she had on the following day assisted in placing her in a coffin. She added, that two sisters of her friend, and two servants of the family, one of them an old woman, her friend's nurse, the other a young girl, had all been ill of the same disorder. As she mentioned that Dr. Pitcairn had attended one of the sisters during her illness, I shortly after requested him to inform me, if what I had heard from Mrs. Hunter was correct. His answer was, that he had attended one of the ladies mentioned
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by Mrs. Hunter, while labouring under Erysipelas of the face; that he had afterwards seen once a sister of hers, who was affected with the same disease, and had learned from the family that another sister, and two female servants, had also been attacked with it. Thus far Dr. Pitcairn's information reaches. From Mrs. Hunter I have further learned, that three of these persons lived in one house, and two in another, but that there was between the two houses very frequent communication; that the old nurse died shortly after her mistress, and that the rest recovered. Mrs. Hunter herself got well in a very few days, and no other person in her family was seized with the disease.

It may be proper to mention here, lest it should be thought by some, that the facts which I have related only indicate the great prevalence of Erysipelas from some general cause, that I saw no more than two other instances of the disease during the time in which they happened. Both occurred in one house; and one of the patients was seized with the disease a few days after meeting the other, while in a convalescent state, upon a narrow stair-case.

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What I have here stated having, in my mind, put it beyond doubt, that Erysipelas is, sometimes at least, a contagious disease, I afterwards enquired of several practitioners of medicine in this place, whether any circumstances had ever occurred to them which countenance this opinion. Mr. Whitfield, the apothecary of St. Thomas's hospital, Dr. Pitcairn, and Dr. Baillie, are those who have furnished me with the most material information upon this subject.

Mr. Whitfield, who has filled his present office for forty-four years, says, that, in the summer of 1760, a person labouring under Erysipelas of the face was brought into St. Thomas's hospital, where he died; that, from some accident, another patient, having a different disease, was put into the same bed before it was properly aired; that this patient was shortly after seized with Erysipelas of the face; that several other persons in the hospital were about the same time attacked with this disease, among whom was an upper nurse, or sister, as she is called, who died; that a rumour hence arose of the plague being in the hospital, which was thought of sufficient importance

by the Treasurer, to be mentioned by him to the Grand Committee of the hospital; and that they, in consequence, desired the physicians, surgeons, and apothecary, to draw up an advertisement, in contradiction of the rumour, and to publish it in all the daily newspapers. By consulting the newspapers of that time, I have found this advertisement, but no mention is made in it of what gave rise to the rumour; nor do any books now at the hospital throw light on the subject. From the well-known accuracy, however, of Mr. Whitfield, no doubt can be entertained of the justness of his statement.

Dr. Pitcairn, in addition to what I have already mentioned upon his authority, has informed me, that in February last he attended a lady, who had been attacked with a fever, immediately after being delivered of a child, which was accompanied with an affection of her skin, somewhat like Erysipelas; that her child, about three days after its birth, was seized with that species of Erysipelas the French call *la gelure*, which first appeared about the pudenda, and afterwards extended itself to other parts
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of the body, among the rest to the face; that both the lady and her child died after a few days illness; and that about eight days after the death of the child, the lady's mother and the servant maid, both of whom had attended it during its illness, were attacked with Erysipelas of the face, from which both of them recovered.

The following is the intelligence which I have derived from Dr. Baillie. During a part of the years 1795, and 1796, Erysipelas of the face was much more frequent in St. George's hospital, than he had ever before known it to be. Many persons were attacked by this disease *after* they came into the hospital; and as the number of cases of it in a particular ward was much greater than that in any other, he was hence led to suspect it was contagious. He has also furnished me with the following facts, not indeed upon his own authority, but upon that of a respectable practitioner of medicine, which he thinks unquestionable. A lady came to London, about the beginning of the present year, to attend a female relation, who was labouring under Erysipelas of her face. But before she
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would enter upon this office, she enquired of the medical person who had the care of her friend, whether she might do it with safety. His answer was, that she might; as the disease was not contagious. She accordingly began to attend upon her friend, but in the space of a few days was herself seized with Erysipelas of the face. A hired nurse of the same ladies was also attacked with that disease during her stay with them; but the sick person, by whom she was employed immediately before, had also been affected with it.

Having thus related what I know of the infectious nature of Erysipelas, from my own experience, and the information of my friends, I shall now mention, in a few words, what I have met with in books in relation to the same subject.

Hoffman says, that there is considerable affinity between the plague and Erysipelas, but that they differ in these two circumstances, that the latter disease is the less dangerous, and is not contagious.—Tom. ii. p. 99: folio:

Sauvages informs us, in his Nosology, Tom. i. p. 452. upon the authority of the history

history of the Academy of Sciences for 1716, that a contagious Erysipelas prevailed that year at Thoulouse, in the convalescents from which the epidermis of the face fell off. But there are several errors in this account. No mention is made, in the History of the Academy for 1716, of any disease at Thoulouse. In that for 1715, p. 14. it is said, that there had been a contagious malady, *un pourpre*, as it is called by the historian, in the towns and villages near to Thoulouse, which carried off persons attacked by it, in two or three days at farthest, and in which the skin (I suppose the scarf-skin, though the French term is *la peau*) fell off *entirely* from almost all those who recovered. From this description of the disease, it evidently appears to have been the scarlet-fever, and not Erysipelas.

Dr. Cullen, in his First Lines, Vol. ii. p. 228. says, that, as Erysipelas “ may arise from an acrid matter externally applied, so it is *possible*, that the disease may sometimes be communicated from one person to another.” I find from a note taken by me in 1780, while attending the lectures of that author, that, in commenting verbally upon this passage, he mentioned, that Erysipelas had

once been observed to be contagious in the Edinburgh Infirmary. From the very cautious manner, however, in which he expresses himself in his book, and from his not admitting into it the circumstance of which I have just spoken, it is clear he was either unconvinced of its truth, or was unwilling to acknowledge it. Indeed, agreeably to his reasoning upon this subject, the disease can never be communicated except by absolute contact, and, when contracted in this way, must occupy, primarily at least, the part only which has been touched. This is the whole of what I have collected respecting the contagious nature of Erysipelas, from the authors upon this disease whom I have consulted.

Should it now be admitted that Erysipelas is sometimes contagious, it necessarily follows, that we ought, in all instances of it, to guard against its spreading. The case of the lady from the country, given by Dr. Baillie, on the one hand shews the hurtful consequence of inattention in this respect; and, on the other, the prevention of the spread of the disease in Mrs. Hunter's family is probably to be attributed
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to the precautions which I directed to be used for this purpose. These consisted chiefly in keeping the room of the sick person well aired, and in preventing all unnecessary communication between her and every other person.

MOST writers upon Erysipelas have been so strongly impressed with the opinion, that this disease, particularly when it attacks the face, depends upon, or is connected with, an inflammatory condition of the whole system, that they have, without hesitation, attributed the delirium and coma, which occur in dangerous states of it, to inflammation of the brain, or its membranes. But there are, I believe, no dissections upon record, which support this assertion; none such at least are to be found in the works of Bonetus, Morgagni, or Lieutaud. It seems, on the contrary, more probable, that the delirium and coma in this disease do in no case depend upon inflammation of the brain, or its membranes; for it is certain, that they may exist in
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Erysipelas of the face without any such cause, since Dr. Baillie found, upon opening the body of a person who died of that disease in January 1796, and who had been affected with delirium and coma, that the contents of the head were altogether free from any morbid appearance *. From this fact a reason may, I think, be justly derived for suspecting the propriety of the practice of attempting to cure Erysipelas by large evacuations, particularly of blood, which has been recommended in conformity to the opinion, that it depends upon an inflammatory state of the system.

But no indirect arguments have been found necessary to persuade those to relinquish that practice, in London at least, who have witnessed the effects of the Peruvian bark, when given early in this disease, in large and frequent doses. The Peruvian bark is given in acute diseases with two very different in-

* The author thinks it may be useful to mention here, as having some connection with the present subject, that he once assisted at the examination of the body of a stout young soldier, who had died comatose, while labouring under a scarlet-fever, unattended with any considerable affection of the throat, in whose brain no mark of inflammation or extraordinary fulness of the blood-vessels was discovered.

tions: One is, either to enable the patient to survive the disease, or to occasion his being left by it in a less debilitated state than he might otherwise be ; without any expectation, that the duration of the disease will be shortened. Such, I believe, is the view of almost every practitioner, when he prescribes the Peruvian bark in the continued fevers of this country. The other intention is, to put an end to the disease in which it is exhibited. It is in this latter way that the Peruvian bark seems to act, when given early in Erysipelas. Mrs. Hunter was the only patient of those mentioned in this paper to have been seen by me, whom I visited early in the disease ; and she was also the only one of them, upon whom I could prevail to take any considerable quantity of that medicine. She was a large woman, of a florid complexion, with a constitution vigorous from nature, and unbroken by intemperance or disease. Though fifty-one years of age, she menstruated as regularly, with respect both to periods and quantity, as at any former time of her life. In short, she was altogether such a person, as would have been deemed

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fit to bear large evacuations by those, who attempt to cure Erysipelas through means of them. I saw her a few hours after her face began to swell, and immediately prescribed for her the Peruvian bark. No other means of relief in the way of medicine were employed throughout the disease, except that from the second day linen rags moistened with brandy were kept constantly applied to the parts affected. Under this treatment the disease gradually subsided, and on the fourth day it intirely disappeared. On the fifth, her husband having fallen ill of the gout, she left her chamber, though in the middle of winter, to assist in the business of the bar-room of a public-house. None of the mildest cases I have hitherto seen of regularly formed Erysipelas of the face, in which the Peruvian bark was not exhibited, have ever been cured in so short a time as four days. But Mrs. Hunter's case was certainly not one of the mildest. For not to mention that two persons had died of the disease in the house where she most probably caught it, her face became, in the course of twenty-four hours after the attack of the disease, so much swelled, as to prevent the separation of her eye-lids of one side from each other.

Vesications had, during the same time, formed upon the swollen parts; her pulse was frequent, her skin hot, and a dry brown streak divided longitudinally the upper surface of her tongue. I therefore conclude, that the Peruvian bark, if it did not prevent death, shortened at least considerably the duration of her ailment. She took four ounces of that medicine in substance, during the first three days of her illness; afterwards its dose was lessened. This quantity is indeed not nearly so great as what is sometimes exhibited in Erysipelas by Dr. George Fordyce, who for upwards of twenty years has been accustomed to give, at St. Thomas's hospital, a drachm of the Peruvian bark, in powder, every hour, in dangerous states of that disease. But four ounces of it in three days are certainly sufficient to produce considerable effects upon the system when disordered; and as this medicine was given to Mrs. Hunter almost from the commencement of her illness, less was probably required for her cure, than would have been, if her disease had made greater progress before it was exhibited.

London, October 1, 1797.

XVIII. Ob-

XVIII. *Observations on the Management of Cases in which the Face of the Child presents towards the Os Pubis.* By JOHN CLARKE, M. D. Read April 3, 1798.

Every person who has been engaged in the practice of midwifery knows, that, if in labour the Face of the Child lies towards the symphysis pubis, considerable difficulty is thereby frequently occasioned.

More force must be exerted by the woman in order to expel the head so situated, and the labour will be protracted to a far greater length, than when the head is in the usual position, with the occiput towards the Os Pubis.

The ground of this difficulty is, because in this situation, the whole of the Face must descend through the pelvis, before any part of the head can emerge from under the symphysis pubis, and because the bones of the Face are incapable of undergoing any alteration from pressure.

On the other hand, when the occiput lies towards the Os Pubis, the different bones, of which the posterior part of the head is

composed, are capable, in consequence of the incomplete ossification at the futures, of very great alteration in their relative situation, so that the form of the whole head may become materially changed, and be better adapted to pass out of the pelvis.

Thus the same head, from this variety in its position, may offer a very different degree of resistance to the powers of expulsion.

If the head should, unfortunately, be placed with the forehead towards the Os Pubis, and the woman should be strong, her exertions and pains must be more violent in proportion to the increased resistance: but the labour, though prolonged very much beyond the ordinary bounds, may at length be finished by her own efforts. But in other instances the difficulty may be so considerable, that her strength may be worn out without accomplishing the birth of the child; and she must either remain undelivered, or artificial force must be substituted for the natural powers, which are found to be defective.

This unfavourable position of the head may be detected by a very little attention to the situation of the anterior fontanelle, and of the futures.

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If, on examination, the anterior fontanelle be felt, and the sagittal suture be found running from it towards one of the sacro-iliac joints, or directly towards the concavity of the os sacrum, there remains no doubt that the Face will be born towards the symphysis pubis.

All the best writers upon the practice of midwifery have taken notice of this cause of difficulty in labour; but they have been contented with describing it, without suggesting any means more especially suited to this case. A reliance upon time, when the woman has strength, and the application of instruments, when she has not, comprehend all the practical advice which is contained in their works.

Chance first led me to the knowledge of the fact, that, in some cases, this position of the head can be remedied, without subjecting the mother to any additional pain, or the child to any kind of danger.

In a case where I had reason to expect some danger, I was desirous of knowing the precise position of the child's head, and whether it was in a situation which would admit of delivering safely with the forceps,

if this should become indispensably necessary. I found the face turned towards the groin, and on endeavouring to ascertain whether the ear could be felt, I was obliged to make a firm pressure against the side of the head with my finger.—In doing this it appeared to be moved a little. Aware of the great advantage which might arise to the patient if I could succeed in bringing the occiput to the pubis, whether she were ultimately delivered by nature or by art, I continued to make pressure upon the side of the head, till in the space of a few minutes the occiput was brought to the groin from the sacro-iliac joint of the same side; the consequence of which was, that, instead of the Face, the occiput was born towards the pubis, and thus considerable pain and difficulty were avoided.

Reflecting upon the event of this case, I thought that the ready alteration in the position of the head might, in this instance, depend upon the pelvis of the woman being very large, relatively to the volume of the child's head, and that a similar change could not be produced by the same means in other cases

cases of a similar presentation.—I determined, however, to make a trial in the next case which should occur. Another case soon occurring, this practice was attended with equal success.

I have now met with fourteen cases, in thirteen of which the practice has succeeded; and as some years have now elapsed since the first case, I think myself fully authorized in recommending this method to be always pursued, when the Face is found in the situation above described. A great deal of pain, and much time, will be spared to the patient by this means.

The manner of effecting the change is, by introducing one or two fingers between the side of the head, near the coronal suture, and the symphysis pubis, and pressing steadily against the parietal, or frontal bone, during a labour pain. When this is done, it will be found, in most cases, that the head yields to the pressure, till at length the occiput is brought to the groin. This being effected, the rest should be left to the natural efforts of the woman.

It is unnecessary to observe, that this alteration will be more easily produced, when
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the Face lies towards the groin, than when the sagittal future runs directly backwards to the sacrum : but even in this case, the change of position may be effected with much more facility than I beforehand supposed to be possible.

When the pelvis happens to be large, or the head of the child small, as there will be more room for the head to turn, the difficulty of doing it will become proportionably less.

In some instances, where the pelvis is small, or the head large, or where the Face is directly turned to the pubis, it may be impossible to change the direction; but these cases are comparatively rare, and as no harm can arise from it, the attempt may always be made.

XIX. *Additional Cases to illustrate Mr. HUNTER's Method of performing the Operation for the Cure of the Popliteal Aneurism. By EVERARD HOME, Esq. F. R. S. Read June 5th, 1798.*

In a former paper, published in the first volume of the Transactions of this Society, I stated the reasons that induced the late Mr. Hunter to propose this operation, and mentioned all the cases in which it had at that time been performed either by himself or others.

Since Mr. Hunter's death two cases have occurred, in which the patients had Aneurisms in both Popliteal Arteries, and others where the disease was only in one. In these cases this operation was performed; and the intention of the present paper is to communicate to the Society these new facts.

CASE I.

JOHN CLEGG, aged 33 Years, a Tobacco-Pipe Maker, was admitted into St. George's Hospital May 29th, 1797, with Two Popliteal Aneurisms.

It appeared that about eight weeks before his admission, while walking, he felt, for
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the first time, an acute pain in the calf of the right leg, extending downwards, which gradually increased. Three weeks afterwards he perceived a swelling in the ham, which enlarged, and in a week more had an evident pulsation in it: this swelling proved to be an Aneurism of the Popliteal Artery.

The knee also swelled, and was painful. When he came into the Hospital the Aneurismal tumor in the right ham appeared externally through the skin, of the size of a large hen's egg: there was also at that time a small Aneurism in the Popliteal Artery of the other leg. He had thick lips, a very red nose, and a pale complexion; and for some months past had experienced frequent bleedings from the nose.

The nature of his business obliged him to walk, upon an average, sixteen or seventeen miles a day, carrying pipes to his respective customers, with the greater part of whom he was compelled to drink porter, which, in the course of the day, did not amount to less than eight or ten pints. There seemed to have been no other particularity in his mode of life.

After

After he had remained in the Hospital a few days, on June 9th I performed the operation of taking up the femoral artery of the right thigh. In doing this I laid bare the fascia which covers the vessels, and made an opening through it large enough to expose the whole diameter of the artery: I passed a crooked silver needle, with a rounded point, behind it, taking care not to include the vein and nerve; in this way the needle and ligature were readily brought out on the other side. The ligature was tied, and immediately the pulsation in the tumor ceased. The wound was united by slips of adhesive plaster and a bandage. About two hours after the operation he complained of considerable pain in the sac, and in the course of the femoral artery, even to the toes.

He took thirty drops of tincture of opium, which dose was repeated at bed time.

June 10th. His skin was hot, and his pulse above 100 in a minute; ten ounces of blood were drawn from the arm, and he was ordered to take the saline mixture; the blood, on standing, shewed no buff: two hours after, his pulse was 96 in a minute,
and

and softer; he complained of numbness in the leg, with a tingling sensation about the middle of the sole of the foot; the heat was the same as in the other leg.

11th. His pulse was 120 in a minute, and strong; there was little moisture on the skin, and great pain in the leg and foot.

13th. The wound was dressed for the first time since the operation; it had a healthy appearance, and the parts were united by the first intention; the tumor in the ham was somewhat diminished, while that in the other leg rather increased since the operation.

16th. He was perceptibly better, the pain in the limb was much abated: the ligature was removed. This was the 12th day from the operation.

27th. The wound was nearly cicatrized, and the Aneurism in the other ham was increasing very fast. He was therefore removed from the Hospital for a fortnight, to re-establish his health, that he might undergo the second operation with greater security.

July 11th. He returned to have the operation performed on the other femoral artery, which,

which, at his desire, was done on the same day of the week as the former operation, and exactly five weeks after it.

14th. The operation was conducted, in every respect, in the same manner as the preceding, and the pulsation in the tumor ceased as soon as the ligature was tied upon the artery.

15th. His pulse was 100 in a minute, and full: he passed a restless night, complained of great pain in the limb, and a slight pulsation was felt in the Aneurismal sac.

16th. The pulsation in the sac was more distinct; this I imagined arose from some collateral branch having a communication with the sac. A compression was made upon the tumor by means of a circular bandage, to prevent the influx from any collateral branch.

17th. His pulse was about 96 in a minute, strong and full; he had little sleep during the night; the pulsation in the sac was rather less than the day before. He complained of pain about the wound, but not so much in the foot as after the first operation.

18th. His pulse was 73 in a minute; the pulsation in the sac was less; he had a

very good night, but now complained of considerable pain in both feet.

24th. He had a slight hæmorrhage from the wound, which was brought on by his mind being agitated in consequence of some improper treatment his wife had received: it stopped of itself, but the tourniquet was loosely applied in case of a return. He complained of heat where the ligature was made; there was no difference in the pulsation of the sac.

26th. A second hæmorrhage took place from the wound, to the amount of three or four ounces, and then stopped. His pulse was about 108 in a minute; he complained of being faint and languid. I removed the dressings, and upon endeavouring to bring away the ligature, some blood escaped from the wound, per saltum, of a florid colour, supposed to be from the rupture of a small artery; a compress was immediately applied to the part, which stopped the bleeding. I removed the compress from the ham, the pulsation in the sac being much abated; eight ounces of blood were drawn from the arm, and he took the saline mixture. The hæmorrhage returned about seven
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in the evening, but was immediately stopped by increasing the compression.

27th. He was very restless all night, and had acute shooting pains in the wound; the bandages were slackened.

28th. He slept well during the night, and had a greater degree of moisture on the skin, and the pains in the limb were not so violent; the dressings were removed, and the wound appeared disposed to slough; the pulsation in the sac was scarcely perceptible.

29th. His spirits were much better; there was an appearance of swelling and inflammation between the wound and the knee; the pressure was therefore removed from the artery, and applied more uniformly over the whole limb.

30th. The ligature was removed without hæmorrhage; this was the sixteenth day after the operation.

August 6th. The hæmorrhage returned at five o'clock in the morning, to the amount of four ounces; a compress was applied to the wound, and kept on by a bandage; he was very restless during the night.

8th. His pulse was 110 in a minute, and felt hard and contracted. He was ordered to take a bolus, containing three grains of camphor every six hours.

10th. Had a bleeding from his nose, amounting to two ounces; he was ordered to lose four ounces of blood from the arm; the dose of camphor was increased to five grains; the pulse was 108 in a minute, and quick before the bleeding, but about twenty minutes afterwards the pulse was reduced to 96 in a minute, and he complained of faintness.

14th. The tourniquet was totally removed.

16th. He felt great pain upon touching the skin of any part of the limb, but particularly at the ham.

18th. Had a very good night, and the wound was superficial, and reduced to the size of a sixpence: it was now exactly five weeks since the operation; a circular bandage was still applied, and the sore dressed with ungt. hydrarg. nitrat. and hog's lard, in equal proportions; there still remained great sensibility in the skin.

26th.

26th. The pain in the limb was much abated; the leg had been fomented with tepid salt water for several days, which gave him a great deal of ease; the wound was nearly healed, and the limb admitted of motion without uneasiness.

September 18th. He was quite well.

The pulsation being felt in the aneurismal sac the evening after the femoral artery was tied, its continuance for several days, and then ceasing altogether, are circumstances so curious, that it may be right to give some explanation of them.

The only way in which the pulsation could recur in the tumor, after it had been stopped, must be by means of anastomosing branches; and if the branch which renewed the communication had its origin near the ligature, it is probable that in the progress of the cure the femoral artery became obliterated higher up than the origin of this branch, and shut it up.

The extent of the artery rendered impervious above the ligature, in the first case operated upon by Mr. Hunter, in which there was an opportunity of examining the

parts after death, makes this more probable.

A case of Aneurism of both Popliteal Arteries occurred to Mr. Joseph Harris, surgeon, at Whitehaven, in the year 1796, of which he has favoured me with the following account, as an addition to the facts in favour of Mr. Hunter's mode of operating in cases of this disease.

CASE II.

William Spencer, a corporal in the Cumberland militia, in the thirty-second year of his age, of a tall and muscular make, was admitted a patient into the Whitehaven Hospital, in June 1795. He had a firm inelastic swelling, extending from the middle of the left thigh down to the toes, and attended with most excruciating pain. He gave the following account of his case. Fifteen months ago, he wore for two months together a pair of tight leather breeches, which made his legs swell, and become so painful, that he was obliged to leave them off; after which time the swelling in the leg subsided, and he suffered no further in-

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convenience. About a month after this, on his return from a journey on foot of ten miles, on a very hot day, he felt uneasiness in the hams of both legs, but went to bed in good health. In the course of the night he had a very profuse sweat, and the next day he discovered a small swelling in each ham; that on the left side continued gradually to increase, and had a pulsation in it, which was sensible to the touch for many months, but afterwards was not to be distinguished; the swelling diffused itself over the limb till it arrived at its present size. Upon examining the other ham, I found an aneurismal tumor about the size of a nutmeg, which he said had remained stationary from the time of its first appearance. The left leg seemed to be too much diseased to give the smallest hopes of saving it. The limb was therefore amputated. Upon examining the parts in the amputated limb, the aneurismal sac in the ham was found to have been burst, and eleven pounds and a half of coagulated blood had been diffused among the muscles, which were in a state approaching to mortification. The stump healed kindly, and he continued well for

three months, without any apparent enlargement of the Aneurism in the right ham; but at the end of this time it began to increase in size, and one day, after a violent exertion upon his crutches, he had considerable pain in it, with an evident increase of the swelling, which now stretched both the ham-strings; there was also a diffused swelling extending over the joint of the knee. From the history of the Aneurism in the other leg, there was reason to expect that this was now burst, and would go on in exactly the same way; it was therefore determined to perform the operation for the Aneurism immediately, according to Mr. Hunter's method; this was done on the 15th of November, 1795. The artery alone was included in a single ligature, and the skin with the other parts brought together, and retained by adhesive plaster. For about two hours after he was put to bed he complained of coldness in the foot, but on covering it with flannel it felt as warm as the leg, which was of the natural heat of the body.

On the second day the swelling of the leg was a good deal abated, and the tumor itself softer.

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On the third day the swelling of the leg was intirely gone, and the tumor more diminished.

On the sixth day the dressings were removed, and the wound had healed by the first intention, except an inch at the lower part, where the ligature passed out; there had been no pain, or swelling of the parts, since the operation, and the limb continued of the natural temperature, except on the fourth day, when it was two degrees hotter by Fahrenheit's thermometer.

On the eleventh day the ligature came away, attended with a considerable discharge of matter; this continued on the twelfth, I therefore made compresion on the sides of the wound throughout its whole length, by compresses and a tight roller.

On the fifteenth, the discharge scarcely moistened the dressings. He was attacked with a purging, attended with disorder of the whole system and loss of appetite, which lasted for a fortnight; during this time the superficial sore remained stationary, but it was compleatly healed, and the patient dis-

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charged from the hospital at the end of the fifth week.

The two following cases contain nothing remarkable, but as they were both operated on in exactly the same manner as the first case in the present paper, they increase the number of instances in which the most simple mode of performing this operation has been attended with success; I have therefore thought, that they will appear to the Society of sufficient importance, to be inserted in this place.

CASE III.

A. B. a dragoon, near six feet high, about thirty-six years of age, came into St. George's Hospital in the year 1794, on account of a Popliteal Aneurism, for which I performed the operation.

In making the external incision, I was desirous of keeping it in a line with the edge of the sartorius muscle, that the muscle and skin might not form a double valve,

valve, and prevent the ready discharge of any matter that should be formed, which I had found to be the case in some instances above-mentioned. As soon as the artery was exposed, I did not attempt to disengage it laterally, but made a small opening on each side of it, just large enough to admit the end of the instrument, conveying the ligature, which was in this way passed round the artery, the nerve and vein being pushed on one side; the ligature was secured, and the wound brought together by means of adhesive plaster.

The man had no fever; little, if any inflammation came upon the limb; the ligature came away the twelfth day, and in three weeks he went to his own house, there being only a superficial sore on the skin, which in a week more was entirely healed.

CASE IV.

George Pile, thirty-five years of age, butler to his Royal Highness the Duke of Clarence, a stout man, of a fallow complexion, and a hard drinker, had been sensible of the feeling of weakness in his left leg

leg for two or three months, when he perceived a tumor of the size of a pigeon's egg in the ham ; ten weeks after he applied to Mr. Knight. The tumor had been enlarged after a journey from Margate upon the top of a stage coach, about a fortnight before, so that now he could not button the knee of his breeches ; there was a strong and equal pulsation in every part of the tumor, which left no doubt of its being aneurismal : the leg was swelled and felt hard, the pulse was quick, and at times intermitted ; his general health however was tolerably good. Mr. Knight proposed performing the operation according to Mr. Hunter's method ; and knowing that I had lately performed it in that way with success, requested that I would assist him. The operation was performed on the 29th of September, 1797, by Mr. Knight, nearly in the same way that I have described in the case last related ; the silver needle was passed behind the artery, without including the vein or nerve, or detaching it for more than a quarter of an inch from its lateral connections ; the pulsation in the ham ceased the moment the ligature upon the artery was tied.

tied. The cut edges of the wound were brought together, except where the ligature passed out. On the 30th the pulse was full and quick, he was therefore ordered to lose ten ounces of blood. August 3d, the dressings were for the first time removed, and the wound was found united by the first intention; a small quantity of matter was pressed out by the side of the ligature. The wound was now dressed every day, and on the 18th he was allowed to get up; the ligature was examined at each dressing, but could not be brought away without using more force than it was prudent to employ. On the 22d, there was a slight hæmorrhage from the wound, which was readily stopped by compression. On the 30th the ligature came away with great ease. November 11th, the wound was compleatly healed; the tumor in the ham was nearly gone; the patient in perfect health, and daily gaining strength, and the use of his limb.

CASE V.

Mr. Marshall, a gentleman about fifty years of age, consulted me in May, 1798,
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on account of a Popliteal Aneurism. The tumor in the ham, at the time I saw it, was considerably larger than a hen's egg. After examining the case, I gave it as my opinion, that an operation was absolutely necessary, to prevent a fatal termination of the disease; and that the chance of recovery depended wholly on the state of the femoral artery: if that was healthy, the operation which I intended to perform would succeed, and if it was not, even amputation of the limb would fail, as the divided artery could not be made to unite.

Dr. Marshal's opinion was taken, whether it was advisable to try compression upon the aneurismal tumor; this he did not approve of, and the patient determined to submit to the operation.

He walked about, and drank a pint of wine daily, till the operation was performed; although I had urged him in the strongest manner to remain perfectly quiet in a horizontal posture, and to live sparingly.

The operation was performed on the 22d of May; I was assisted by Dr. Marshal, and Dr. Wallis was present. When the incision
through

through the skin had exposed the sartorius muscle, it appeared unusually large, and the fascia covering the artery was got at with difficulty, and was indistinctly seen; this I attributed to the state of the muscles induced by the exercise which the patient had continued to use.

My first attempt to secure the artery failed, from the needle passing over it, and only including a portion of the fascia; I therefore exposed the artery more completely, about an inch higher up the thigh, and surrounded it by a ligature; the pulsation in the tumor immediately ceased, and the wound was dressed as in the former cases.

The leg continued colder than the other for two days, and then regained its usual heat.

On the fourth day, the dressings were removed, and the wound had a healthy appearance; at this time there was a pulsation in the tumor.

On the seventh day, he bore being moved to have his bed made, and was considered to be going on perfectly well. From some mistaken notion he now indulged himself

self in the use of wine, without my knowledge.

On the ninth day, he had a violent shivering fit, which was not mentioned to me, and the use of wine was, notwithstanding, persisted in.

On the tenth day, the discharge from the wound was much increased, and the thigh and leg were swelled.

On the eleventh day, there was a slight bleeding from the wound, and in the evening a similar bleeding also took place. Alarmed at this circumstance, I left an assistant with the patient. The tourniquet likewise, which had remained on the thigh, was now adjusted, in case it should be necessary to use it.

On the 12th day, at four in the morning, a violent hæmorrhage came on, and at nine he died.

The limb was examined next day, in the presence of Dr. Marshall, Dr. Wallis, and Mr. Colthurst. The ligature was found to have included the artery without the vein, and when the artery was laid open, the space embraced by the ligature was quite white, and the coats at that part so thin as

to be almost transparent; and there were also several small ulcerations through the coat by which the blood had escaped: there was not the smallest union of the sides of the artery; but immediately above and below the ligature, the inner membrane had an unusual red appearance.

The inner membrane had lost its usual polish, and had its surface covered with opaque white spots; the same appearance, in a less degree, was seen in the artery near the groin.

The aneurismal tumor proved to be a diseased dilatation of the Popliteal Artery, of an oval form, situated between the heads of the gastrocnemius muscle.

In this case the femoral artery was so much diseased, that probably neither amputation, nor any other operation with which we are acquainted, would have been attended with success. But as that is a circumstance which rarely happens, and can never be ascertained during the person's life, it ought not to be considered as an objection to the operation, though its possible existence must always render the event somewhat uncertain.

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The internal surface of the artery in the present case became inflamed, without admitting the union of its sides, as happens when the operation succeeds. This inflammation, although probably owing chiefly to the diseased state of the artery, may yet in part have been produced by the neglect of proper attention in regard to diet and rest, previous to the operation, and more particularly by the indulgence in wine after it.

XX. The Case of PAUNCHOO, an Inhabitant of the Village of Gundassée, in Pergunnah Humnabad, and Province of Tiperah, Bengal. By JOHN CORSE, Esq. Read June 5, 1798. Communicated by Dr. BAILLIE.

THE subject of this very extraordinary case came to me for the first time in 1790, and presented himself among some other patients for my advice and assistance. Observing an amazingly large tumour, apparently of the scrotum, tied up in a cloth, I conceived it must be either a Hydrocele or a Hernia of an uncommon size, as the tumor descended below the knee. After dismissing the other patients, I ordered Paunchoo into a room, to examine accurately for extraordinary an appearance of disease.

I felt distinctly the spermatic cord on each side, which was considerably enlarged, but smooth and equal; but found the external genitals blended in one mass, without the least appearance of what could be called

the penis or scrotum : the tumour had a soft steatomatous feel, had been forming for nine years, and was at this time of the following dimensions :

Length, nineteen inches : circumference, at the middle, thirty-two ; at the root, fourteen ; and at an irregular prominence, near the point, sixteen inches. The integuments were rough and unequal, and had besides a few warty excrescences.

At this time, viz. in 1790, he was about thirty-three years of age, as far as he could judge, but the natives of Bengal are generally very incorrect on this head. He never knew, according to his own account, a woman till he was twenty-three, nor ever had any venereal complaint. So many years having elapsed before he had connection with a female, appeared to me so singular an instance of continence in a native of a warm climate like Bengal, that I questioned him particularly with respect to his desire for women, previously to his first connection. He acknowledged, that long before this period, he felt the same desires as other men, but through shame, and the fear of his father, did not indulge them ; and that
form-

forming an illicit connection with a female in the neighbourhood, a quarrel soon ensued between them, on which she complained to his father, Sheik Anoor Odein, and also informed him of their intimacy. In consequence of this, his father abused and beat him; but he affirmed, that he did not receive any hurt in or near his genitals, either then or at any future period; and he further added, that after this quarrel, he never had connection with any female.—About six months after, when working at the sugar-mill, he first perceived a slight pain at the raphe, in the lower part of the scrotum; this gradually increased, and in four days a swelling came on, which was confined to the skin of the scrotum. The pain abated, but the swelling continued to increase, and in the course of five years the penis and scrotum were blended in one mass. During this period, there were sometimes slight excoriations from which an acrid fluid was discharged, but these readily healed up by the application of some simple remedies recommended by his neighbours, besides which he has used no others.

His appetite was good, he slept well, his pulse was natural, and body regular; he complained (1790) of a pain in his loins only when the tumour was not properly suspended, but had hardly any pain, and never had any flatus or symptom of rupture in the tumour itself, which he allowed to be handled with considerable freedom. When he squatted down, and let the tumour remain on the ground, it had exactly the same kind of feel, as the fresh omentum of a large quadruped before it becomes cold. He made water easily, but with a gurgling kind of noise, and could throw it, as I myself saw, two or three inches from him, while sitting on the ground, the tumor resting thereon, but the end raised a little with his hands. The opening to the urethra was backwards, and to the left side, being a canal formed by the elongation of the integuments, which extended a great way beyond the end of the penis, the exact termination of which he pointed out. This I never could discover satisfactorily, but could feel, though obscurely, the testicles, which seemed little, if at all, increased in size, and gave no pain

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except

except when handled roughly. Their situation was nearly natural.

Having never seen before, nor heard of any case similar to this, I scarcely knew what name was applicable to the disorder; but from the feel of the tumour, I concluded that, exclusively of the diseased state of the integuments, there was a collection of fatty matter. Doubtful of the propriety of attempting any operation for his relief, I carried the poor fellow to Calcutta in January 1791, and got him admitted by the head surgeon, Walter Ross Monro, Esq. into the general hospital. It being agreed, on a consultation, that nothing could be done for him, he was soon after dismissed, and returned with me to Tiperah. I afterwards tried a variety of medicines, but the disorder still increased, and his left leg, which was swelled only a little when he first came to me, was now (1794) considerably enlarged, as may be seen by looking at the accompanying drawing, which is correct. I frequently measured the diseased parts, and on the 18th of October, 1794, the dimensions were as follow:

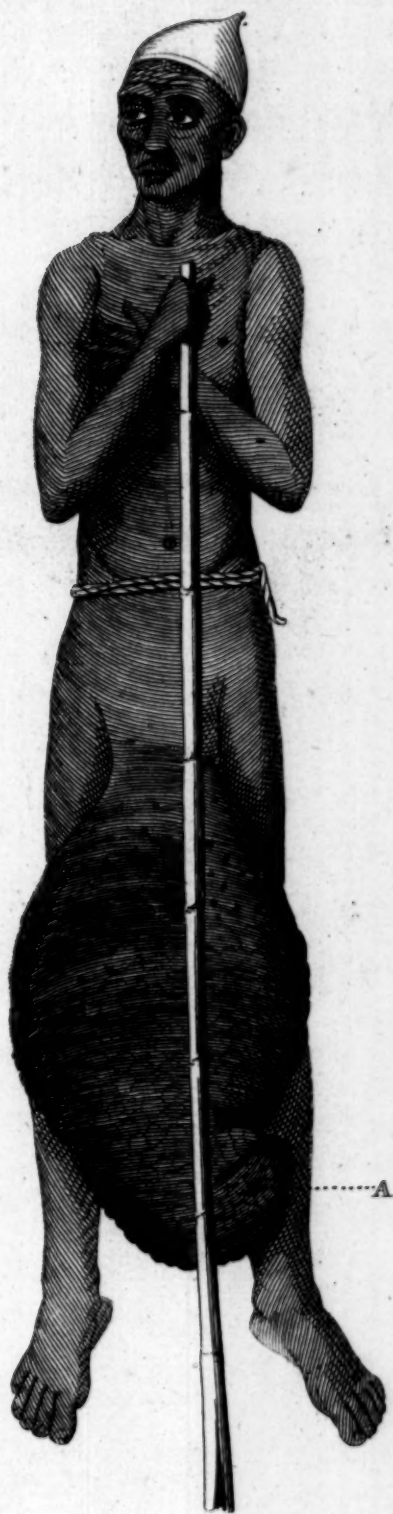
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Length,

Length, twenty-five inches; circumference, at the middle, thirty-eight inches; and at the root, fourteen, as before; but at the protuberance, near the end, twenty inches. His appetite continued good, though the pain in his loins had increased from the greater weight in the tumour. By the weight of the tumour, even the whole of the integuments of the trunk and neck were upon the stretch, as appears evident from the drawing, where the clavicles seem starting through the skin, while the tumour remained unsupported, in order that the painter might take an exact view of the parts.

When I last saw him, in June 1796, he could not then walk without pain, however well the tumour was supported. I never saw him afterwards, as he resided near twenty miles distant, assisting in the cultivation of some waste land, which was procured for him from the Zemindar of the Pergunnah.

The drawing was taken by a native in the service of my friend Charles Ruffel Crommelin, Esq. of Luckipore, who obligingly sent him to Tiperah at my request, and is justly esteemed a very true and striking likeness
of



W Skelton sculpsit

of the patient, as well as of the parts diseased, by all, and those not a few, who have seen them.

Tiperah, Dec. 16, 1796.

A. The orifice in the tumour, out of which the urine was regularly voided.

XXI. *An instance of the entire want of Hair in the Human Body. Communicated by W. C. WELLS, M. D. F. R. S. Read July 3, 1798.*

As it rarely happens, that the human body is totally deprived of its hair, without there being some preceding or accompanying disease, to which this loss may be attributed, the following instance of such an occurrence seems not unworthy of notice.

John Pardon, a maker of weather-glasses, a native and inhabitant of London, of a fair complexion, stout make, and healthy appearance, while upon a journey about fifteen years ago, was surprised to find one morning, that a considerable lock of hair had separated from his head during the night. He was then thirty-six years of age, was in perfect health, had been so for a considerable time, and had never before observed his hair, which was as thick as that of most men, to come away in any uncommon quantity. He had never been infected with the venereal disease, and, as far as

as he knows, had never taken any mercurial medicine. From this time, the hair of his head continued to fall off in such quantities, that, in about five or six weeks, there remained of it only a single lock behind, which he cut off. This never grew again. In the same interval his beard gradually became thinner, and wholly disappeared about the time he cut off the lock from his head. In the same interval also, he began to be more than usually incommoded by dust getting into his eyes as he walked in the streets; at length, upon looking into a mirror, he found that both his eye-brows and eye-lashes were gone. Shortly after he discovered, that the hair of every other part of his body had also fallen off.

About two years after his hair had begun to fall off, he cut his right thumb by striking it against the teeth of another person. The wound was healed with difficulty, and soon after broke out again. An acute pain now extended from it to his neck, where a tumour appeared, which afterwards suppurated, and for some weeks discharged matter through several small holes. While the sores upon his thumb and neck were open,

open, a fine down appeared upon his cheeks and chin, which occasioned him to shave once a week for about three months, when it disappeared. Since that time he has never observed any hair upon his face, or other parts of his body, except sometimes a single pile upon the back of his hand. His venereal appetite in the mean time has not been less than that of most men of the same age. About five years ago, when forty-six years old, he married for the first time, and his wife has borne him two children, and is now pregnant with a third.

Such is the account which this person gives of himself, and I think it may be regarded as correct, since most of the circumstances which I have mentioned were, he says, committed to writing by him at the times they occurred.

But however this may be, it is at least certain, that no hair is now to be seen upon his head, eye-brows, eye-lids, cheeks, chin, inside of his nose, arm-pits, breast, back, pubes, upper or lower limbs; all of which parts I have examined twice. When I first examined him, his skin was altogether free from scurf or eruptions; upon his arms and
 3 legs,

legs, however, were several patches of a brownish hue, similar to the appearances which take place in winter upon the legs of persons who sit long near a fire. The second time I examined him, which was in the spring of the present year, 1798, there were, besides those patches, a number of small pimples upon each side of his belly, and a part of the skin of the backs of his hands was somewhat rough.

In some countries, the person of whom I have been speaking would no doubt look ridiculous, if not frightful; but in this, his appearance is but little remarkable. His head is covered with a wig; his cheeks and chin seem as if they were newly shaven, and from the fairness of his complexion, his want of eye-brows and eye-lashes is scarcely discernable, unless he is near to the spectator, and even then is often unnoticed.

XXII. History of a Case of Aneurisms cured by a Natural Process. By JOHN MAJOR WILSON, House Surgeon to the Westminster Hospital. Dated February 19, 1798. Communicated by Dr. CLARKE, and read September 4, 1798.

Richard Donovan, 32 years of age (who had for many years followed the laborious occupation of a blacksmith), in the month of October 1796 perceived that his right leg was considerably swelled. The swelling was constantly augmented towards the evening (especially about the ankle), but in the morning when he arose was scarcely perceptible. He had not laboured under any illness before the appearance of the swelling, except a slight pain in the side, which had continued for some months, and which, about this time, had entirely left him. This swelling of the limb gradually subsided, and at the end of two months totally disappeared. At this time a small circumscribed tumour took place in the ham, attended with pulsation, a slight degree of inflammation, and

and a great deal of pain, particularly when the limb was in motion. The patient derived considerable relief from lying in a horizontal posture, but he passed very restless nights.

About a week after the first appearance of the tumour, it was of the size of a walnut, and in a month as large as a hen's egg. The pain increased in proportion, so that the limb did not admit of flexion, or of full extension, without occasioning excruciating agony to the patient. In this situation he applied to an apothecary, who recommended to him the use of a liniment and mercurial friction. But finding that the tumour still increased rapidly, he applied to the Westminster Dispensary for assistance, and was informed that an early operation was absolutely necessary. From this he was recommended to Mr. Lynn, of the Westminster Hospital, who corroborated this opinion. At that time the patient seemed to consent, and accordingly agreed to be at the Hospital on the following day. However, instead of coming there, he procured admission into St. Thomas's Hospital, where he became Mr. Cline's patient. Upon
a con.

a consultation, the surgeons were all of opinion, that nothing but an operation could save the life of the patient. To this, however, the man determined not to submit. He left the hospital in a few days, and applied to an empyric, who undertook to cure him in a fortnight. At the end of this time, the swelling had become very large, and the pulsation was but little diminished. He then applied to another empyric, who told him (to his extreme distress) that the tumour was a white swelling, and advised him to have immediate recourse to mercurial friction upon the part affected, and to rub a red ointment upon the sole of the foot. The complaint still continued its progress till February 1797; at which time the tumour was as large as a man's head. The skin over the whole extent of the tumour was become greatly inflamed and very tense, and the pain almost intolerable. The pulsation was now only to be discovered by pressing firmly with the fingers upon the superior part of the tumour. His appetite however still continued good, and his bowels regular.

At

At this period, the patient consulted another surgeon, who at once perceived from the advanced state of the disease, that nothing could be expected from the operation for the aneurism; he therefore advised the immediate amputation of the limb; but the patient being willing to procrastinate the operation, procured admission into St. Bartholomew's Hospital; his stay here however was very short, for learning that an operation was proposed, he went away in less than a week after his admission. During his stay in the hospital, the diseased knee was cupped and scarified.

On the day preceding his departure from the hospital, one of his crutches slipping, occasioned him to fall to the ground, by which accident the swelled knee was much bruised, but there was not at that time any other apparent injury. On the third day from the accident, he perceived (at the same instant) two distinct tumours, each of which was about half an inch in diameter, attended with violent pulsation, and a slight degree of pain, situated high upon the course of the femoral artery of the left thigh; they enlarged very quickly, and the limb upon
which

which they were seated was considerably benumbed.

In this condition he was admitted into the Westminster Hospital, under the care of Mr. Lynn, with no expectation beyond that of rendering the remainder of his life tolerably comfortable, as far as his situation would admit of it. The outside of the thigh and leg, upon which was situated the popliteal aneurism, was like the other, much benumbed; and for more than nine weeks there had not been any pulsation in the tumour, which may be attributed to the very numerous layers of coagulated lymph within the aneurismal sac. It was now thought that the pulsation of an aneurism of the aorta below the diaphragm could be felt, so that as there was a general tendency to this disease, there was no chance of success by operation. Shortly after the patient's admission into the hospital, the skin of the tumour in the ham became considerably inflamed and tense, with such excruciating pain, that large doses of opium were required to allay it. An oozing of bloody serum had already taken place from the most depending part of the tumour, where the cuticle

cuticle had burst; and as every moment seemed to threaten the destruction of the patient, the tourniquet was constantly kept in readiness for application.

Such was the patient's miserable condition, when (having resided seven days at the hospital, and finding that no further relief was likely to be obtained) he insisted upon being removed to his lodgings, notwithstanding every argument to point out to him the very great risk he ran of hastening his dissolution. The oozing of serum continued for some days after his leaving the hospital, nor was the pain at all diminished. His appetite remained good, but he was rather costive.

On the 6th of May (being the ninth day from the first appearance of the serum) when in bed, he had suddenly the sensation of a fluid running down his leg; upon examination, he perceived that the integuments of the tumour in the ham had given way, and that the blood was rushing from the wound in such quantity, that in the space of five minutes, four pounds were lost. During this time he fainted repeatedly. On the 8th, the wound was

become much enlarged, discharging large lumps of coagulum occasionally during fourteen days.

By this time the knee was nearly reduced to its natural size, and the wound discharged a thin matter, which was gradually succeeded by a discharge of pus. When this violent hæmorrhage from the ham had subsided, the patient observed, that the lowest of the crural aneurisms had altogether lost its pulsation, and was gradually diminishing, whilst that situated nearest to Poupart's ligament was rapidly increasing, and extremely painful. His appetite was notwithstanding very keen, and his bowels regular. In this situation the patient was a second time admitted into the Westminster Hospital, where (by Mr. Lynn's direction) moderate and uniform pressure was made by a flannel roller upon the tumours in the thigh; and the wound in the ham was superficially dressed. The discharge continued very copious for fourteen weeks, and varied in its appearance according to the state of the health of the patient. He was supported with cordials and nutritious diet; and at the end of four months from his admission into

the hospital, the wound was completely cicatrized.

The scar (although the ulcer had been four inches in length, and very deep) was reduced nearly to the narrowness of a line.

In the mean time the aneurisms upon the thigh (the pressure having been continued until a slight degree of tumefaction had taken place over the limb) had approached so nearly to each other, as to form apparently one tumour, without any pulsation. In the course of two months it was considerably softer and less painful.

Before the patient quitted the hospital (which was on the 10th day of January, 1798) it was so very much diminished in size, as to be scarcely discerned when his breeches were on. It was perfectly soft, and gave no uneasiness. He at this time (February 19th) enjoys a tolerable state of health, having no other complaint than a weakness of his lower extremities when he continues long in the erect posture. The left extremity, upon which were seated the crural aneurisms, is considerably

ably less than its natural size. The other is the most serviceable limb, although it is shorter by two inches; the effect of the mischief is in the ham,

reduced nearly to the narrowness of a line. In the mean time the aneurism upon the thigh (the prostate having been removed) until a slight degree of inflammation had taken place over the limb) had approached to nearly to each other, as to form apparently one tumour, without any pulsation. In the course of two months it was considerably softer and less painful.

Before the patient quitted the hospital (which was on the 10th day of January, 1798) it was so very much diminished in size, as to be scarcely discerned when his breeches were on. It was perfectly soft and gave no uneasiness. He at this time (February 18th) enjoys a tolerable state of health, having no other complaint than a weakness of his lower extremities when he continues long in the erect posture. The left extremity, upon which was seated the aneurism, is considerably

XXIII. *Experiments and Observations on the Growth of Bones, from the Papers of the late Mr. HUNTER. By EVERARD HOME, Esq. F. R. S. Read October 4, 1798.*

MR. HUNTER's Observations on the Growth of Bones have been mentioned in his Lectures ever since the year 1772, the first year in which he gave lectures, and have been since adopted by the principal teachers of anatomy in London; it was therefore natural for me to suppose, that they were generally known. In this, however, I find I have been mistaken, since the present Professor of Anatomy in Edinburgh, in a late publication, declares himself an advocate for the doctrine of Du Hamel; and from what he advances, it appears, that he was not at all acquainted with Mr. Hunter's experiments upon this subject.

Under these circumstances, I lay before the Society Mr. Hunter's Experiments and Observations, that they may be made known to the public.

It was some time anterior to the year 1772, that Mr. Hunter began to investigate this subject, and an account of the experiments and observations was given to me to copy in that year, as a part of his future lectures.

Du Hamel had published a very ingenious theory upon the Growth of Bones, which he endeavoured to support by experiments tending to prove, that Bones grow by an extension of their parts: with this doctrine Mr. Hunter was not satisfied, and instituted experiments to determine the truth of Du Hamel's opinion.

Mr. Hunter began his experiments by feeding animals with madder, which has a property of tinging with a red colour that part only of the Bone which is added, while the animal is confined to this particular food.

He fed two pigs with madder for a fortnight, and at the end of that period one of them was killed; the Bones, upon examination externally, had a red appearance; when sections were made of them, the exterior part was found to be principally coloured, and the interior was much less tinged.

The

The other pig was allowed to live a fortnight longer, but had now no madder in its food; it was then killed, and the exterior part of the Bones was found of the natural colour, but the interior was red.

He made many other experiments of the same kind upon the increase of the thickness of the neck and head of the thigh bone. From these it appeared, that the addition of new matter was made to the upper surface, and a proportional quantity of the old removed from the lower, so as to keep the neck of the same form, and relatively in its place.

To ascertain that the cylindrical Bones are not elongated by new matter being interposed in the interstices of the old, he made the following experiment: He bored two holes in the tibia of a pig, one near the upper end, and the other near the lower; the space between the holes was exactly two inches; a small leaden shot was inserted into each hole, when the bone had been increased in its length by the growth of the animal, the pig was killed, and the space between the two shot was also exactly two inches.

This experiment was repeated several times on different pigs, but the space between the two shot was never increased during the Growth of the Bone.

Besides these experiments on the Growth of Bones, he made others to determine the process of their exfoliation. He cauterized portions of Bone in the same way in several different animals, so as to be able to examine the Bones in the different stages of this process, and found that the earthy part of the living bone, in contact with the dead portion, was first absorbed, afterwards the animal mucilage itself, so as to form a groove between the two, which became deeper and deeper, till the dead Bone was entirely detached; the dead portion itself having undergone no change.

From these experiments he ascertained the changes which take place in Bones during their Growth, and the readiness with which the materials of Bones are absorbed; and from these facts, laid it down as an established principle, that the absorbents are the agents, by means of which the bones, during their Growth, are modelled as it were, and kept of the same shape.

Bones,

Bones, according to Mr. Hunter's doctrine, grow by two processes going on at the same time and assisting each other; the arteries bring the supplies to the Bone for its increase; the absorbents at the same time are employed in removing portions of the old Bone, so as to give to the new the proper form. By these means the Bone becomes larger, without having any material change produced in its external shape.

As the present paper is only intended to explain what Mr. Hunter's opinions were upon this subject, having done so, I shall leave them to their own merits. Dr. Monro's mode of stating them, and his arguments in opposition to them, are transcribed in a note*.

The

* "Of late years the absorption of the solid parts of
 " animals has been mentioned by a few writers who have
 " published in London; and as Mr. John Hunter has
 " been quoted by some of them as the author of this
 " doctrine; I must here observe, that so far back as the
 " year 1759, and ever since that time, I have men-
 " tioned, in different parts of my annual course of lec-
 " tures in this university, all the circumstances above-
 " mentioned which relate to the Bones, and likewise
 " several of the circumstances which appeared to prove
 " an

The treatise, in which Dr. Monro opposes
Du Hamel's experiment to Mr. Hunter's
opinions,

" an absorption of the other solid parts, and particularly
" I endeavoured to explain on this principle, the changes
" which are produced on the sternum and ribs by aneu-
" rism, which Dr. William Hunter, at that time, ac-
" counted for, on the erroneous supposition, that these
" Bones were melted down by the current and solvent
" power of the blood.—See Med. Obs. and Inq. Vol. I.
" 1757. p. 344.—But in this case," says he, " the ap-
" pearance was rather as if the blood had insensibly dis-
" solved and washed away the substance of the Bone,
" making greatest havock in the softest part of the Bone,
" as we see in stones of unequal texture that have been
" long washed by a dropping, or a stream of water.
" Has the blood that property which some have ascribed
" to it, of dissolving bony matter?" &c.

" It is plain, then, either that Mr. John Hunter had
" not, at that time, proposed the doctrine of the absorp-
" tion of osseous matter, or, if he did so, that his brother
" was ignorant of it, or paid no regard to it.

" When, near twenty years thereafter, Mr. John Hun-
" ter mentioned such an opinion in his lectures, it appears,
" from the testimony of a very sensible and ingenious
" gentleman (Dr. Winterbottom) who attended him
" then, and who in his Thesis, has shown his disposition
" to do him justice, that he rested his opinion chiefly,
" if not solely, on the circumstance, that in growing
" animals the medullary canal is enlarged in its diameter,
" which he took for granted must be owing to an absorp-
" tion of the internal layers of the Bone, whilst new
" layers were adding to its external part; not knowing
" layers

opinions, has still another object, it is intended to prove, that Dr. Monro had a knowledge of the power of the absorbents to act

“ that the celebrated Du Hamel has, upwards of half a
 “ century ago, proved by the following simple and decisive experiment, that the diameter of a Bone, as
 “ well as that of its medullary canal, is increasing in
 “ growing animals by an extension of the several layers
 “ which compose it.—See Mém. de l’Acad. des Sc.
 “ 1743, p. 102.—‘ J’entourai l’os d’un pigeonneau vivant
 “ avec un anneau de fil d’argent, qui étoit placé sous les
 “ tendons, et sur le périoste. Je laissai là cet anneau,
 “ pour reconnoître ce qui arriveroit aux couches osseuses déjà formées, supposé qu’elles vinssent à s’étendre;
 “ car je pensois, que mon anneau étoit plus fort qu’il ne
 “ falloit pour résister à l’effort, que ces lames osseuses
 “ seroient pour s’étendre. Il résistoit en effet; et les
 “ couches osseuses, qui n’étoient pas encore fort dures,
 “ ne pouvant s’étendre vis à vis l’anneau, se couperent.
 “ Ce qui prouve bien l’extension des couches osseuses,
 “ c’est qu’ayant disséqué la partie, je trouvai, que le
 “ diamètre de l’anneau n’étoit pas plus grand que celui
 “ du canal médullaire.’—To show still more clearly
 “ that Mr. John Hunter had built his opinion on an
 “ erroneous foundation, I have remarked in many diseased bones in my possession, in which the thickness
 “ of the bones is greatly increased, that the medullary
 “ canal is much diminished. From this, and from Du
 “ Hamel’s experiment, then, we may observe that the
 “ plates of the Bones may be extended in all directions,
 “ or that they grow in length, breadth, and thickness.”—
 Vide three Treatises on the Brain, the Eye, and the Ear,
 by Alexander Monro, M. D. 1797.

upon

upon the solids of the body prior to Mr. Hunter.

As it is not presumed, that Mr. Hunter borrowed the opinion from Dr. Monro, and as Mr. Hunter has published very fully his own claims to the discovery of the use of the absorbents, I do not feel it necessary to enter into any discussion upon this subject; but my curiosity led me to inquire what opinions Dr. Monro delivered in his lectures prior to 1772, and some years after that period, and I shall close this paper with two extracts from manuscript copies of his lectures, taken by two very attentive and intelligent students who are now high in the profession as physicians.

The following extract is made from notes taken in the year 1770.

“ Purposes of Absorption.

“ 1st. To change the particles in shut
 “ cavities of the body, which would other-
 “ wise run into corruption. Next, it must
 “ compensate exhalation, otherwise dropsy
 “ would arise. Next, secreted liquors are
 “ fitted for their purposes by having their
 “ thinner parts carried off by absorption.
 “ Semen, bile, wax of the ear. We are
 “ taught

“ taught also, that what is thus absorbed
 “ may answer some useful purpose in the
 “ rest of the economy. We cannot ac-
 “ count for the quantity of fat, but by sup-
 “ posing that what is resumed is useful.
 “ The bile likewise,—and the semen, is evi-
 “ dently useful in this manner from the
 “ effect of castration upon the system. The
 “ lungs seem to take in something useful,
 “ while they give out something hurtful.
 “ Next, absorption seems to prepare certain
 “ parts for circulation by mixing and dis-
 “ solving them. Thus Lower found, that
 “ milk injected into the veins of a dog,
 “ threw him into convulsions.”

The following is part of a note of a lec-
 ture delivered by Dr. Monro the 10th of
 January 1776, on the absorbent system,
 being all of it which relates to the uses of
 that system. It was the custom of the phy-
 sician who made it, to take only very short
 notes of lectures while present at them, lest
 any thing material from the professors should
 escape his notice during the time he was
 occupied in writing. He extended these
 notes somewhat, and then wrote the whole
 out fairly in the evening of the same day
 on

on which the originals were made ; he thinks, therefore, it was scarcely possible, that so important an office of the absorbent system as that of removing solid parts could pass unnoticed, had it been spoken of by Dr. Monro in the above-mentioned lecture.

“ The uses of this system seem to be, to
 “ take in nourishment from the intestines
 “ by the lacteals ; perhaps by the branches
 “ dispersed on the surface of the body to
 “ draw in from the air somewhat necessary
 “ for animals, to absorb the inhaled liquors,
 “ to prepare parts necessary for the various
 “ secretions ; perhaps to bring from the
 “ different glands back again to the system
 “ something useful for the preservation of
 “ health, to prepare the chyle for its mixture with the blood. Dr. Monro can form
 “ no probable conjecture about the uses of
 “ the lymphatic glands, nor does he think
 “ any so that have been made by others.”

XXIV. A Case of an Extra-Uterine Fetus discharged by the Rectum. By Mr. MAINWARING, Apothecary. Communicated by Dr. BAILLIE. Read March 5, 1799.

A. C. was of the middle stature, but well proportioned, and rather thin. She lived temperately; was married at the age of twenty-nine, and conceived very soon; but suffered more during her pregnancy, than is usual in that state.

She miscarried at the end of a few months, but recovered from this accident perfectly.

Nine months after the miscarriage, she conceived a second time, but being more attentive to her situation, she arrived at her full time, and on the 26th of February, 1794, was delivered of a large and healthy male child.

She suckled her child for a twelvemonth, during which time she menstruated regularly. Afterwards, about the beginning of February, 1796, the menstrual discharge ceased for the space of nine weeks, during which time she suffered much from morning sickness, and pains in the groins. These pains

pains extended over the whole of the pelvis, in the lower part of which, and also over the pubes, a considerable sense of fulness was complained of, attended with frequent and strong desire to go to stool.

She had formerly been much subject to the piles, and at this time was troubled with them.

She passed very small quantities of urine, with much difficulty and uneasiness.

On the 3d of April, 1796, she was attacked with severe pains in the region of the Uterus, accompanied with hæmorrhage, and they continued with little or no abatement for three weeks. She was expected to miscarry, but no ovum came away. Under these circumstances she was considerably relieved by the use of fomentations, neutral salts, and opiates.

On the 29th of May, while in bed, laying her hand upon the lower part of the abdomen, where she suffered much pain, she perceived a hardness or lump a little above the left groin, and there was a throbbing in the part.

Being at this time in the country, she returned in a few days to London, and upon

a more

a more particular examination being made, a tumour was likewise felt above the right groin, which in the course of two or three weeks extended almost as high as the navel, but it was most evident on each side of the *recti abdominis* muscles.

A considerable pain was complained of whenever even a small degree of pressure was applied to any part of the abdomen, but chiefly a little above the upper part of the tumour.

This was the state of the case in the beginning of June; about that time a coffee-coloured fluid was discharged from the urinary bladder, almost without her possessing the power of restraining it. The quantity nearly amounted to three pints in twenty-four hours. Before this period, the quantity of urine was less.

The urinous discharge probably contained some portion of blood.

A discharge of blood was also found to come from the vagina, and it continued to appear in a small quantity until the end of September, 1796, when it entirely ceased.

She consented to be examined *per vaginam*, (a suspicion arising of a tumour being

formed in the pelvis) and a tumour was found in the hollow of the sacrum, occupying its whole extent, and projecting so much forward as nearly to fill the cavity of the pelvis. It seemed to lie between the vagina and the rectum, and was less than two inches within the pelvis, reckoning from the external orifice.

The os uteri was altered in its shape and situation, being pressed against the bladder and pubes. The cervix uteri was so fixed in its situation, as to resist any attempt which was made to move it upwards. From these circumstances the urine was passed with difficulty.

The shape of the tumour in the hollow of the sacrum (as far as it could be ascertained by examination with the finger) was nearly round, but somewhat flattened upon the anterior part. In breadth it was supposed to be between three and four inches; and in thickness, from two to three. It felt moderately firm.

It should have been noticed before, that the tumour in the pelvis was lower than that which is found in cases of retroverted uterus; and that the posterior part of the vagina was

without the puckering, occasioned in that disease by the fundus uteri falling behind the vagina.

The above remarks were made early in the month of July, 1796, about which time the abdomen had acquired the appearance it generally has in the sixth month of pregnancy.

The patient observed, that by laying both hands upon the abdomen, and pressing with them lightly downwards, the tumour in the lower part of the pelvis seemed to descend in a small degree.

The patient complained of so much pain (in July) over the whole of the abdomen, that she was bled, and the blood drawn was fizy. Fomentations and opiates were also used with relief. And it should be noticed, that to such means recourse was had three or four times during the space of sixteen months; in which time topical bleedings also were used twice.

Towards the end of September, an obscure motion was sometimes felt by the patient in the abdomen, and the breasts were observed to secrete milk. The stomach was also much affected with nausea. From this

time (Sept. 29, 1796) until December 23, she had no menstrual discharge. On that day the menses appeared, and returned with great regularity for the space of ten months.

From the time of the renewal of the menstrual discharge, until the 10th of August, the patient had several attacks of pain in the abdomen and loins. The patient was in consequence reduced in flesh, and the tumour in the abdomen was more easily traced. It was found to be an uniform substance, for before this period, it was not possible to determine if it was one or more tumours.

August 10, 1797, a second examination was made per vaginam, and for the first time it was observed, that the tumour in the hollow of the sacrum did not admit of so much pressure as was remarked ten months before, without occasioning painful sensations.

The tumour was not found to have increased much in size, but its density was become so considerable, that it felt like bone, and in tracing the surface, it was not difficult to discern ridges, or (as it was supposed)

posed) futures. Upon repeated and attentive examinations, the head of a foetus was felt through the posterior part of the vagina.

An attempt was now made to determine if the tumour in the vagina was connected with that in the abdomen, and by pushing the tumour in the pelvis upwards, that in the abdomen was perceived to be in a small degree elevated.

The only material change discovered after the month of August was, that the tumour in the pelvis, when pressed upon, was more painful.

Towards the end of September, the lower tumour was supposed to contain a fluid, and the bones, when lightly pressed, could be made to recede. The patient became now more feyerish, restless, and reduced in flesh.

On the 22d of October, a discharge took place by the rectum, in colour and consistence it resembled pus, and the smell of it was very putrid. It was not found to be blended with the faeces, but came away between the stools, and occasioned a frequent and distressing desire to discharge it. The

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quantity

quantity each time was from one to two ounces.

This discharge continued without abatement in quantity for the space of two months, and in a smaller quantity until the termination of the process.

On the 29th of October, by straining the discharges, there were found small quantities of hair; this was seen several times.

On the 25th of November, a strip of apparently ligamentous substance was discovered, and in two or three weeks another, each about two inches long.

During this month, the distention of the abdomen became much reduced; and in the month of December, it was difficult to discover any resistance from the tumour above the pubes. That in the pelvis was found to have in some measure receded, or was lessened; but the bones contained in it were more evident, and a grating among them was easily perceived by passing the finger along the sac.

About two inches up the rectum, in the anterior side, an aperture about as wide as a silver penny was discovered by Dr. Denman.

On

On the 31st of December, 1797, two bones were found in the fæces, a radius and ulna; they were without epiphyses and periosteum, and were only one inch and a quarter in length.

On the 2d of January, 1798, two bones of the thumb were found; and on the 5th, two of a finger; with part of a cervical vertebra, and also a tooth.

On the 7th, the occipital bone was brought away with considerable difficulty and distress, by the patient assisting herself in some measure with her fingers.

On the 8th and 9th, several bones of a lower extremity, with another tooth; and a third was found a few days after.

By passing a finger up the rectum, through the aperture (which was now much enlarged) several bones of the head were readily felt. The patient not permitting them to be then extracted, they were suffered to remain until the 17th, when one of them being somewhat advanced, and giving her much uneasiness, it was brought away by turning the saw-like edges of the bone, which proved to be one of the parietal, towards its concave side, with the aid of a pair of dress-

ing forceps, after a tedious and distressing trial; and on the 21st, the other was in the same manner extracted, but without the patient suffering so much. Oil was previously injected each time.

Immediately after the second parietal bone was brought away, one of the tibiae was extracted.

All the bones of the upper part of the head were without the pericranium, very thin, and brittle.

On the 22d, with one of the frontal bones, several small ones were expelled; and on the 24th, the greater part of the basis of the skull, with a ligamentous and membranous substance, holding them loosely together. There came also on the same day several bones of a lower extremity, mostly of the foot; and each day, during the remainder of that month, several small bones were collected.

On the 1st of February, came away the other frontal bone, the whole of the spine, and all the ribs attached to it; also a humerus with the scapula, the whole of the pelvis, and one thigh bone, all loosely connected together, with the intestines to the spine,

spine, and lying in the pelvis in a collapsed state, but little or no appearance of the other viscera.

On the same day, came away a lower extremity from the knee, with its integuments and skin entire.

This was the last part of the foetus that was found in the discharge, and supposed to make the whole that belonged to it.

About the 14th of February, there was found among the fæces a few pieces, or shreds of apparently thickened membrane, having some resemblance to flakes of coagulated lymph, and of a yellowish white colour. This was supposed to have been part of a cyst, which perhaps had enveloped the foetus.

It appears that this process occupied a space of two years and about two weeks.

During the last four months she was from weakness confined to her bed, and in a state of almost perpetual sweating, and seldom free from feverish affection; the pulse was generally at the rate of one hundred in the minute.

She was considerably reduced in flesh; her appetite was much impaired during the whole

whole time; and while confined to the bed, she took but very little sustenance; a few weeks however before the termination of this tedious and distressing trial, milk was found to agree with her stomach, and its good effects were soon evident.

She also experienced much relief from opium, of which she took from two to six grains a day.

Attempts were frequently made to throw up glysters, but without success.

As soon as the last expulsions had taken place, her amendment was most evident; her appetite became urgent, and she took food very often, every kind agreeing with her stomach. Her flesh returned rapidly, and in less than three months her strength was restored.

On the 8th of March following, she had pain in the lower parts of the abdomen, attended with diarrhoea, which left her in about twelve hours, and the following day the menses returned, which had not appeared for the space of three months. She did not experience any interruption in respect to menstruation; in the first return the quantity was comparatively small, but
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an increase was remarked at each period and in the space of eight months it was found to amount to its usual quantity.

P. S. Sept. 10, 1799. It may be proper to state, that Mrs. C. enjoys at present, and for the last eighteen months has enjoyed, uninterrupted good general health. Her monthly periods are regular, but the quantity of blood is less than was usual before her last pregnancy. She sometimes too complains of an uneasy sensation in the vagina; and, upon examination, the projecting part of the cervix uteri into the vagina, was found to be shorter upon the left side than upon the right. The vagina might be said to be somewhat constricted upon the left side, so that the cervix uteri was less moveable there than upon the right, and some pain was felt upon touching that part with the finger.

XXV. *A Case of Pregnancy, in which the Ovary had become diseased, and was entirely filled with small Hydatids.* By EVERARD-HOME, Esq. F. R. S. Read April 3, 1799.

THERE are many cases mentioned of the placenta losing its natural structure, and becoming a congeries of Hydatids; several of these have been published, but in all the instances on record, as far as I am acquainted with them, the patient had miscarried, and the placenta was examined after being separated from the uterus, so that the disease could not be exactly ascertained.

The following case, in consequence of its melancholy termination, afforded an opportunity of the parts being examined in their natural situation, and of determining precisely the seat of the disease.

Elizabeth Yeoman, thirty years of age, was delivered of her ninth child on the 22d of December, 1797, and recovered from her lying-in in three weeks, as she had usually done after former labours. She continued
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in perfect health till the 1st of August, 1798, when a flooding came on, which was supposed to be an uncommon flow of menstrual discharge; this continued for ten days; it created an alarm, and an accoucheur was consulted.

He found, upon enquiry, that she had not menstruated before for twelve weeks, and there was an evident enlargement of the abdomen; he had therefore no doubt of her being pregnant, and thought she had advanced to the third month. From this explanation of the case, the present hæmorrhage appeared to be a flooding preceding abortion.

The ordinary means for restraining the flooding were used, and on the 14th it had entirely stopped. She was now attacked by a vomiting, attended with a hot skin, and a pulse at 109. These symptoms were relieved by a gentle emetic, and saline draughts with rhubarb.

On the 20th, there was a return of the vomiting, with spasms over the whole abdomen, and the general bulk of the belly became much encreased; these symptoms resisted

resisted all means used for their relief, and she died on the 22d, in the evening.

Upon inspecting the body after death, the womb appeared to be of the size that it usually is five months after conception. The os tinæ was a little dilated, receiving with tolerable ease the end of the finger.

A longitudinal incision was made through the anterior part of the uterus, extending from the os tinæ to the fundus; this incision was continued through the membranes of the ovum, but no cavity was found, no fœtus presented itself, and every part was occupied by an infinite number of Hydatids of different sizes, from that of a pin's head, to the size of a common grape, scarcely any of them being so large as a full sized grape. They were attached to the nearest surface, and to every part of the amnion equally.

Upon separating the membranes composing the ovum from the uterus, which was easily done, the situation of the placenta was readily ascertained; it was near the os tinæ on the posterior surface of the uterus, and was unattached, a separation having taken place during the patient's life time; this

this had occasioned the flooding, which gave the first alarm respecting her safety. The surface next the uterus had not its usual shaggy appearance, but was nearly smooth; it scarcely projected beyond the membranes of the ovum, and was about two inches in diameter.

The mass of Hydatids which filled the ovum were all connected with one another; were very tender, and readily broke down when handled. This mass of Hydatids was very different from those met with in the liver, which are spherical, and those with long necks and heads, found in the brain of sheep; they were connected to the surface of the membrane, and to those Hydatids, with which they were united, by short pedicles or necks. To ascertain whether there was any appearance of a foetus, I examined the whole with minute attention, but could not perceive the smallest remains either of one, or of a funis; nor could I on the inner surface distinguish any thing like the ordinary structure of the placenta.

The Hydatid structure of the placenta, as a disease to which that part is liable, is, I believe, very well known, and specimens of

of it are preserved in different collections of anatomical preparations. My attention in this case was directed to the investigation of the disease, and from the facts I have stated, it does not appear to be a change in the structure of the placenta, but a general affection of the amnion. When this disease takes place, the natural healthy actions for the support of the foetus are so much impeded, that its growth is arrested. This evidently happened in a case published with an elegant engraving of the placenta and foetus, by Dr. Denman; and when the patient does not early miscarry, the foetus disappears; and in all the instances where miscarriage has taken place in a more advanced stage of the disease, I believe no foetus has been found.

XXVI. Case of strangulated Hernia, where the Operation succeeded after the Obstruction had continued eight Days. By HENRY FRYER, Surgeon, at Stamford, on the 27th of January, 1798. Read April 3, 1799. Communicated by Dr. CLARKE.

I was desired to attend Mr. Middleton, of this place, aged fifty-three years; I found him with an incarcerated Hernia, vomiting up great quantities of faecal matter, with hiccough, cold extremities, and a hard, quick, contracted pulse.

The intestine had been strangulated for eight days. The tumour now had the appearance of an abscess near maturation. It was entirely confined to the groin, was of an oval space, and nearly two inches in length, exclusive of the surrounding hardness. As the usual means for reducing the Hernia had already been employed, and as the obstruction had continued eight days, I advised the operation, as affording the only chance of recovery.—It was agreed to.

On dividing the integuments, a small quantity of pus was found lying upon the

sac, which was very offensive. The lower part of the sac was completely *mortified*, and the surface so smooth, thin, and like that of the intestine, that I was very cautious in dividing it; upon dividing it, no fluid was found, but a considerable quantity of *putrid air* escaped. The intestine was much inflamed, was small in bulk, and was readily returned on dividing the tendon. The wound was then dressed superficially, and compresses wrung from warm brandy and water laid over it. The patient was ordered four grains of soft purified opium, in two pills, to be taken an hour distant from each other.

Sunday morning.—He has had no motion—was ordered half a drachm of the compound extract of colocynth, divided into six pills, one of them to be taken every hour. His vomiting still continues in some degree.—His pulse pretty strong.—At night, not having any motion, he took six grains of calomel—as he was restless, he was also ordered to take forty drops of tincture of opium.—His pulse was now very weak.—He had the facies hippocratica, and I thought that

that I should not see him alive in the morning.

Monday morning.—He has had four motions.—It is now *thirty-six* hours since the operation. His pulse is stronger.—He took some broth.—His vomiting at times still continues.—At night he took an opiate.

Tuesday.—He has had several more motions in the night, and also during the day.—He feels languid, his pulse is low, and he has some hiccough—he was ordered a mixture with camphor, and an opiate.—The tension of the abdomen is very much gone off.

Wednesday.—From this time he continued to grow better; the mortified sac began to separate.—His bowels were kept open, and he was allowed to take strong broth, and other liquid nourishing diet.—He also took decoction of Peruvian bark thrice a day.

Before the end of the third week, the whole of the sac had digested away, leaving a healthy granulating fore.—In five weeks from the operation, the wound was more than half healed; and in six weeks and a few days was compleatly cicatrized.

—I recommended him to wear a truss.

This case illustrates very strongly, that hardly any period is too late in strangulated Hernia to forbid the operation being attempted with some chance of success. But after all the ordinary means for reducing a portion of strangulated intestine in a hernial sac have failed, the sooner the operation is performed, the chance of success becomes proportionably increased.

XXVII. *An Account of a singular Disease in the upper Maxillary Sinus.* By JOHN ABERNETHY, F. R. S. &c. Communicated by Dr. BAILLIE. Read June 4, 1799.

SAMUEL HUDSON, who is now in his thirty-fourth year, perceived, when he was about ten years old, a small tumour upon his left cheek, which gradually increased to the size of a walnut; in which state it remained stationary for some time. About a year afterwards, the tumour having again increased in size, a caustic was applied to the integuments, which exposed the bone. The actual cautery was next applied to the tumified bone, and an opening was made from the surface of the face into the antrum, and this never afterwards closed. After the parts which the cautery affected were exfoliated, the antrum filled with fungus, which rose out of it upon the cheek, and which could not be restrained by any medicated applications that were employed. At the same time part of the fungus made its way into the mouth through the socket of

the second tricuspid tooth ; the other teeth however still remaining firm, and in their natural situation. In this state the disease continued for nine years, during which time, however, the fungus occasionally bled in an alarming manner. When he was in the twentieth year of his age, he was seized with a fever, in which all the fungus sloughed and came away, and has not returned. From that time the sides of the aperture in the bone began to grow outwards, forming an exostosis, which has grown to a great magnitude. A small exostosis also took place in the mouth, which having attained the size of a horse-bean, did not afterwards grow larger. The exostosis of the Maxillary bone is of an irregular figure : it has grown equally all round the aperture to a considerable height, projecting straight forwards, or rather with the edges sloping outwards. The integuments continue in a sound state to cover the bony growth. The height of this nearly circular exostosis, and its dimensions, have been for about fifteen years gradually increasing. In the present state of the disease, I can compare its appearance to nothing which it

so much resembles as a large tea-cup fastened upon the face, the bottom of which may be supposed to be open, and to communicate with the antrum. The dimensions of the cavity are as follows: The diameter of the cup formed by the circular edge of the bone is three inches and a half; the depth from the middle to the cavity of the antrum is two inches and seven-eighths; the general height of the sides of the exostosis, measured from the bones of the face, is two inches; the walls of this exostosis are not thick, and terminate in a thin circular edge. The common integuments become attenuated as they approach this edge, they extend over it and line the inside cavity, where they are very thin and of a delicate texture, as the skin becomes in some parts of the body; but when I first saw the patient they were perfectly sound. This exostosis now occupies, as may be supposed from its dimensions, almost the whole of one side of the face. It extends upon the nose in front, and backwards as far as the masseter muscle; at the upper part, it includes the very ridge of the orbit; and below it grows from the edge of the alveolar

process. It is nearly two years since I first saw this patient, and the circumference of the diseased bone was then, in my opinion, much too extensive to admit of removal. A line that would separate the diseased from the sound bone, would have included the orbit and nose, indeed it would have comprized one half of the face. To cut down the sides of this cup seemed to me an useless and improper attempt, as I could not suppose but that they would be reproduced, and probably increase the more rapidly from the irritation of an operation. I therefore saw no means by which this patient could derive benefit. He was at that time attended by a quack, who filled the cavity with leaves of hemlock, and has lately attempted to destroy part of the walls of this exostosis by very corrosive liquors, which has tortured the patient, and I think produced a considerable extension of the disease. This case I conclude will interest medical men, merely as a striking instance of an uncommon disease of a bone. When the destruction of the tumour was first attempted, a fungus doubtless filled the antrum, and had caused the elevation of the bone; and after an aper-

aperture had been made, it sprouted out upon the cheek and crept downwards into the mouth. The fungus was at last removed in consequence of fever, and was not reproduced, but either the bone now became diseased, or if it was previously affected, the state of it was not altered by the fever.

XXVIII. *Some Observations upon the Combination of Medicines.* By GEORGE FORDYCE, M. D. F. R. S. &c. Read Sept. 17, 1799.

The recital of cases which illustrate the state of the body in any particular disease, either by making known the appearances which take place in the patient when living, or those which are found on dissecting the body after death, and which are different from those in health, is of great importance toward the improvement of medicine, and is, therefore, one of the principal objects of the Transactions of this Society. If the whole science of medicine was grounded on a certain base, and the histories of all diseases were given in a correct manner, it would be only left to those who wished to improve the science to observe excrescences, and to add some new ornament to the art. This, however, is very far from being the case, nor can be until a great number of cases of diseases shall be recorded in the manner I have pointed out in the first volume

lume of the Transactions of this Society, or in some other similar to it. In the mean time, it may not, perhaps, be foreign to the intentions of the Society, to lay before them some observations which I have made respecting the manner of exhibiting remedies. This will not come with that strong evidence that would arise, if every case on which they are founded had been accurately laid before the Society, but will stand on the same ground on which, at present, the whole precepts in medicine are founded; to wit, the result of the reflections which have suggested themselves to the mind of a long-experienced practitioner. Every one knows, that in all the prescriptions that have come down to us, from the most ancient Greek physicians until the time when the Roman Empire was finally destroyed, a vast number of remedies were mixed together so as to form one mass; such mixtures were used in most diseases. The same thing is to be found in Celsus and in all the Roman authors who have treated on medicine, who indeed are very few. The same observation is applicable to the Arabian physicians.—Some works on medicine, which have been found

found in Hindostan, bear marks of the same attachment to composition of medicines, but they seem to be borrowed from the Greek writers, and not to be translations from the Sanscrit language. This disposition for combining medicines came into modern Europe from the East, and has been continued down to our days. There are many prescriptions of Dr. Huxham's extant, which contain four hundred ingredients. In this age, when the foundation of all doctrines has been very properly enquired into, many have questioned the utility of mixing medicines together, and have thought it better to exhibit a single medicine. The purport, then, of this paper is to enquire, whether it be better to employ one single substance by itself, to produce medicinal effects, or whether, and in what cases, it may be better to employ a variety of medicines mixed together.

I shall, in the first place, treat of the operation of purgatives.

All purgatives have not the same effect, though they all produce more frequent and more copious evacuations from the intestines than take place in perfect health. For example, natron vitriolatum occasions a purg-
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ing much sooner after it has been exhibited than aloes or rhubarb. Again, aloes and rhubarb occasion an evacuation of feculent matter, while natron vitriolatum ordinarily occasions an evacuation of a watery fluid. If an evacuation is wanted sooner than would take place from employing aloes and rhubarb, and, at the same time, an evacuation of feculent matter, it evidently would be better to mix natron vitriolatum with aloes or rhubarb, than to use either aloes or rhubarb alone, or the natron vitriolatum alone; and such mixture is actually found to produce a quicker evacuation, and at the same time a more feculent one than the aloes or rhubarb, or the natron vitriolatum would have produced singly. It is therefore evident, that if such was the intention of the practitioner, it would be better for him to use a mixture of aloes and natron vitriolatum, or a mixture of rhubarb and natron vitriolatum, than it would be to use either natron vitriolatum, rhubarb, or aloes by itself.

This, then, is a case in which it is evidently useful to mix two purgatives together instead of employing one of them alone,
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and therefore it is better, in some cases, to employ medicines mixed together, when their general operation is of the same kind.

The next point which I shall attend to is, that a practitioner may wish to produce two different effects at the same time, as in many cases of morbid purging a practitioner may wish to make the vessels of the intestines contract so as not to secrete so large a quantity of fluid, and at the same time he may wish to relax the vessels of the skin, so as to make these secrete a larger quantity of fluid, and, in consequence, occasion sweating. In this case he might employ tormentil to act as an astringent upon the intestines, and ipecacuanha to relax the vessels of the skin; the ipecacuanha sometimes tending to relax the vessels of the intestines, and the tormentil tending rather to contract the vessels of the skin; but the ipecacuanha having little power in relaxing the vessels of the intestines, and the tormentil having little power in contracting the vessels of the skin, the purging may be stopt, and sweating at the same time made to take place.

When, therefore, a practitioner wishes to produce two effects at the same time,

time, he may evidently gain the point by mixing two medicines together, which he could not obtain by using either of them singly.

If a medicine be given in a certain dose it has one effect, but if in another dose it often produces another and very different effect; sometimes even the reverse. If we apply weak vinegar to the skin, it produces paleness and contraction of the skin; if we apply acetous acid, the same substance diluted with a less quantity of water than it is in weak vinegar, it occasions redness of the skin and tumour.

If a small quantity of a decoction of the bark of the cinchona be exhibited to a patient, whose stomach is weak, and subject to sickness and vomiting, it will prevent sickness and vomiting from taking place. If a larger quantity be exhibited to a patient whose stomach is weak, it will excite vomiting. When this happens, a small dose of each of two medicines which have the same tendency, will often more readily produce the effect which we wish for, without any reverse affection taking place, than a larger dose of either of the medicines separately.

Thus, in a weak stomach, joining to the bark of the cinchona, in such quantity as it can bear without occasioning sickness, a dose of camomile, gentian, or any other bitter medicine of the same class, would increase the powers of the cinchona in strengthening the system, without occasioning any sickness of the stomach. If this be true, it would certainly be much more eligible, in a weak habit, where the stomach cannot bear a large dose of the decoction of the cinchona without sickness, to join with it camomile, wormwood, &c. than to employ it alone.

If we take an example from cookery, in which the object is to make the stomach bear a large quantity of food without sickness, by adding spices to it, it has been the uniform practice of all nations with which we are acquainted, never to employ one spice alone when two can be procured, and even to mix a greater number together. Pepper alone, ginger alone, cinnamon alone, garlic alone, or any other spice or stimulant alone, would not render any kind of food capable of being retained in the stomach in so large a quan-

a quantity as when these spices or stimulants are mixed together.

There are two errors, or, as Lord Bacon calls them, idols of the mind, which are equally pernicious to science, especially to such a science as medicine, which has not, and perhaps never can be, established upon absolute and certain experience. The one is, an unbounded belief in the precepts laid down by those who have gone before us in medicine; some practitioners supposing, that the observations of our ancestors have been founded upon unquestionable experience. The other is, a total doubt and disbelief of every thing that has been advanced by those before us: hence proceeds, with regard to the powers of medicine in disease, a wish in every young practitioner to depend upon his own experience alone. Both these errors are to be avoided; for if a man is to trust entirely to what has been laid down by authors who have gone before him, it becomes necessary, that he should be a perfect judge of the merits of the works of those authors. On the other hand, it is impossible for the experience of any one man, however well he may be acquainted with

every science, to make any great progress in medicine.

These things being premised, I wish to point out what classes of medicines admit of mixture, when they have all a tendency to produce the same effect; and, in the second place, what classes of medicines, having different properties, may be mixed together so as to produce good effects. The first of these propositions will form the subject of what follows.

In the first place, although it has been much the practice to mix medicines together which have been said to have a demulcent quality, by which has been always meant the capability of preventing stimulants from acting upon parts which they would otherwise stimulate without producing any chemical change in them; such as farinaceous matter, as it is found in the flour of wheat and in the other seeds of the gramina, in the pith of plants, as of the palm tree, and in gum tragacanth, and as sugar, gum arabic, and other gums not coagulable by heat, matter found in the roots of the orchises, and other plants of that natural class, as saloop, &c.; yet I have not
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found any advantage gained by mixing these together, excepting from mere convenience of application. With the same intention some animal substances have been made use of, such as ichthyocolla, which is the sound of sturgeon, the sounds of many other fishes, together with jellies formed from the cartilages of many other animals, or solutions of any part of an animal which is without taste or smell. I have never found any advantage from a mixture of these for the purposes above mentioned, excepting merely from convenience of application. For instance, in a catarrh the thin mucus secreted by the glands in the mouth, throat, and larynx, stimulates the mucous membrane, so as to produce a greater degree of inflammation than would otherwise take place. If sugar be employed alone, in the form of what is called a lozenge, it dissolves quickly, and does not remain for a sufficient time to defend the membrane. If farinaceous matter be employed alone, it does not dissolve in the water of the saliva, and therefore passes down into the stomach without being of any use. The same thing is to be said of gum

as of sugar, though the solution does not take place quite so regularly. Ichthyocolla, and other such substances dissolved in water, so as to form a gelatinous matter, have a degree of softness, which prevents any sharp point from stimulating the mucous membrane. The mixture therefore of farinaceous matter, sugar, gum, and ichthyocolla makes a better lozenge for defending the mucous membrane of the mouth, pharynx, and larynx from the stimulus of the thin matter of the mucus, than any one of them do taken by itself. The farinaceous matter prevents the sugar and the gum from being so soon dissolved; the viscosity of the sugar and gum prevents the farinaceous matter from being swallowed so soon as it would otherwise be; and the ichthyocolla gives a softness to the whole, which prevents any sharp points from stimulating the membrane. A lozenge therefore of these, or similar substances, will be better than one formed of any one of them taken by itself; and so of these substances in other cases.

Bitter medicines, which tend to strengthen the system, such as the bark of the cinchona, several species of the artemisia of
Linnaeus

Linnaeus (who, it may be observed, has constantly endeavoured to mislead students in medicine, by taking the name of the genus from the species which has the least effect, or a dissimilar effect, from the greatest number of the species in it), as absinthium, absinthium maritimum, &c. which have been more commonly used, and have effects different from artemisia; several species of carduus, camomile, the rinds of fruits of the orange kind; the gentians, and many others, as far as my observation has gone, sit easier on the stomach, and tend more to strengthen the system when mixed together, than when any one of them is employed singly. Whether the bitter juice contained in all these plants is the same substance, as the sugar and indigo contained in many plants are the same, or whether it be, that the essential oils in these various plants containing a bitter juice are different, certain it is, that they tend to strengthen the system more when mixed together, than when any one of them is employed singly. Preparations of iron, given in small doses, tend to strengthen the system, and were very often employed for this purpose before the cin-

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chona came into use. Since that time they have been less in practice, though certainly rather from the fashion of medicine, than that they are not useful; but there is a degree of stimulus in all of them, which renders them too apt to occasion frequency of the pulse, and therefore, as far as I can judge, it is better to give them at the same time with such bitter medicines as are strengthening, though they will not well bear to be mixed with them, as they tend to coagulate and destroy the bitter juice of the vegetable. The bark of the cinchona, as well as other bitter juices of vegetables of a similar kind; likewise preparations of iron, zinc, copper, and tin, have a power of preventing many applications made to the body from exerting so considerable an effect as they otherwise would have done if these medicines had not been exhibited; which effect is one among others that has been expressed by saying, that they diminish the irritability of the body. I have not observed, that a mixture of any two of these medicines is of any use in producing this effect: For example, the bark of the cinchona has a power of preventing the cause
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of the return of an intermitting fever from re-producing the disease; but I have never observed, that mixing preparations of zink, iron, or copper, or any bitter, increased the power of the bark of the cinchona, or that the bark of the cinchona increased the power of any of these medicines in preventing the return of an intermitting fever.

Many astringent medicines are found in vegetables. There is some doubt whether it is not the same astringent juice which is found in all of them, as most of them are coagulable by many metallic and aluminous salts. Be this as it may, the mixture of several different vegetable astringent substances, as far as my experience goes, seems to be much better than giving one of them singly, whether it be to check secretions (as purgings) in cases where it is proper to employ astringents for that purpose, or in hæmorrhage, in cases where astringents may be employed for the purpose of stopping them. It is better, for example, to employ tormentil, madder, simarouba, logwood, together, to stop a purging that arises from weakness and laxity of the intestines, than to employ any one of them by itself. In a hæmorrhage,

rhage, where a disposition to inflammation, and a flow of blood upon the part have been taken off, or when neither exists in the first part of the disease, it is better to join the astringency of the petals of red roses, to that of vitriolic acid and alum, than to employ any of these astringents singly.

In spices and other such stimulating substances, I think there can be no doubt, both from my own experience and likewise from the constant practice of mankind, that where it is not meant to inflame the part of the body to which they are applied, it is much better to mix them together, than to employ one of them singly. One spice, such as, for example, the dried capsule of the capsicum, being taken into the stomach, tends to give a sense of heat and pain in the stomach, and even produces a sense of coldness in the exterior parts of the body, if given in considerable quantity; and in like manner does a quantity of pepper; but if an equivalent quantity of capsicum and pepper be given mixed together, no such sense of pain in the stomach or coldness arises in the extremities, but a warmth is felt in the stomach, and a glow of heat over the whole body;

body; and if capsicum, pepper, ginger, cinnamon, and other spices be joined together, the chance of sense of pain, and of coldness of the extremities, is still further diminished, and a greater glow of warmth in the stomach and heat in the extremities, and other exterior parts of the body, is produced. The advantage of mixing spices I have found by my own experience: it has also been the constant practice to mix spices together from the first ages of medicine down to this time.

In medicines which have a tendency to produce relaxation in all the vessels and fibres of the body, such as preparations of antimony, ipecacuanha, neutral salts, &c. it is a question which I am not able to decide, whether it be more useful to mix them together, or exhibit them singly. All these medicines given in a large dose by themselves, are apt to produce sickness. The sickness Dr. Cullen conceived to be the cause of their producing relaxation in the vessels and fibres throughout the body; hence he called them nauseating medicines; yet, as far as I have been able to judge, when the stomach will bear a large quantity of any
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one of them, without occasioning sickness, they have a much greater effect in producing relaxation, than when it will bear only a small quantity. They seldom too have any effect in relaxing the small vessels throughout the system, if a very small dose occasions sickness: for instance, if the stomach will bear the third part of a grain of tartarized antimony, without occasioning sickness, it has a powerful effect in relaxing the fibres and vessels throughout the system; but if the stomach will not bear more than a fifth part of a grain of tartarized antimony, this has rarely any effect in producing relaxation of the fibres and vessels throughout the system. I therefore suspect, though I cannot affirm it from experience, that a mixture of these remedies may also be exhibited with greater effect than any one of them singly.

In evacuants of all kinds, where the evacuant is applied immediately to the part from whence the evacuation is to take place, or in other words, where it is applied to stimulate the ends of the excretory ducts in the membrane, on which the secretion is thrown out; as when a stimulating medicine

cine is put into the mouth, so as to act upon the ends of the excretory ducts of the salivary glands opening into the mouth ; it is evidently better and more efficacious to mix several different species of stimulants, such as spices or acids with neutral salts, than to employ any one of these singly. If one is employed singly, it tends to inflame the membrane of the mouth when it is such a stimulant as a spice, or tends even to make a less flow of saliva if it be a neutral salt. When several of these stimulants are mixed together, by the gentle action of each, they have not so pungent an effect upon the membrane of the mouth, but are much more powerful in increasing the secretion from the salivary glands. The same thing may be observed with regard to er-rhines applied to the nostrils.

In like manner, when a substance is taken into the stomach with a view to produce sickness, and consequently vomiting, I have generally found it better to mix substances together, such as ipecacuanha and tartarized antimony, than to employ either of them singly ; or in case of poison being swallowed, it is better, in order to produce vomiting quickly,

quickly, to mix *zincum vitriolatum* and *ipecacuanha*, than to employ either of them singly.

I have already remarked, that purgatives are different in quality from one another, and that their mixture may be useful in producing different effects, but where the object is simply that they should act as laxatives, by increasing the peristaltic motion of the intestines, several remedies being mixed together will be more efficacious, and act without giving so much pain to the patient as any one of them singly. Indeed since I conceived the idea of laying this paper before the Society, I have found, I think, a better mixture of laxatives than any in the *Pharmacopœia* of the London College, where the peristaltic motion only of the intestines is wished to be increased; to wit, five parts of aloes, three parts of *sagapenum*, two parts of gamboge, one part of distilled oil of camomile, two parts of gum-arabic, which is necessary to give a consistency, so that they may be made into pills with sufficient quantity of the syrup of the *spina cervina*. From six to ten grains of this mass operate gently without giving
pain

pain in most cases; colocynthida, which has been commonly used in similar compositions, is apt to give pain, without producing so certain an effect.

When the object is to produce great secretion in the intestines, an equal advantage, as far as I have been able to judge, has been found by mixing several purgatives together, which have the same effect; such as natron vitriolatum, kali tartarificatum, manna, jalap, &c. with infusion or tincture of senna, which last purgative, as far as I can judge from experience, is the most certain stimulus to the intestines in producing purging, of any substance which I have ever tried.

I have now enumerated the several applications employed to act upon the ends of the excretory ducts, terminating in the mucous membrane of a cavity opening externally; but there are also certain medicines which, getting into the blood-vessels, are applied to the ducts, which secrete the fluids in the glands in different parts of the body. Mercury, for example, being rubbed down with any viscid fluid, and either applied to the skin or taken into the stomach, is absorbed and gets into the blood-vessels;

vessels; is secreted by the salivary glands, as appears from the metallic taste; and, being so secreted, stimulates the salivary glands, and occasions a greater secretion from them.

I know well, that many other suppositions have been held about the action of mercury in producing a greater secretion from the salivary glands. It has been urged, that it requires the evidence that the mercury, if secreted and carried into the mouth, ought to affect the colour of gold, copper, or other metals, if they are kept some time in the mouth. But it has often been known, that corrosive sublimate, given to the quantity of five grains in the space of three or four days, has occasioned salivation; this quantity of corrosive sublimate must have been received into the blood-vessels, and mixed with at least thirty pounds of fluids, and have passed off equally by all the excretions, of which the saliva could not form a tenth, and the quantity of mercury in corrosive sublimate is not the half; and therefore the quantity of mercury that could be secreted by the salivary glands in the five days, could only be the twentieth part of a grain; and

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consequently in one day, not more than the hundredth part of a grain. Supposing then, that the patient had kept a piece of gold, copper, or other metal, for twenty-four hours in the mouth, it could not be expected that more than a hundredth part of a grain of mercury should have attached itself to the metal, even if the metal had caught every particle of the mercury from the saliva, which hundredth part of a grain would not have been sensible on the surface of the metal.

It may be said again, that so small a quantity of mercury applied to the salivary glands could not stimulate them; but it must be observed, that the quantity of any substance capable of stimulating any part can only be known from experiment, and not investigated *a priori* by any means.

Many have conceived, that medicines taken into the blood-vessels could not reach such secretory organs so as to stimulate them, when the secretion from these organs is extremely small. It has been thought, for instance, that no substance could get into the blood-vessels and be secreted by the glands which open upon the mucous membrane

brane of the lungs, on account of the extremely small secretion which commonly takes place in these glands, it not being perhaps more than the five hundredth part of the whole secretions that take place in the body. It has been therefore thought, that the quantity of stimulating matter contained in five grains of the root of squills, which certainly cannot be more than one grain, could not possibly affect the lungs, as there could not be a five hundredth part of a grain applied to the whole of these glands at once, and perhaps not a millionth part of a grain to any one of them; but who can say that a millionth part of a grain of squills may not act upon one of the glands of the lungs, when certainly an infinitely less quantity of a particle of light (if light be a body, as we have the greatest reason to believe) is capable of acting upon the retina?

It seems therefore clear, that substances may get into the blood-vessels, and be applied to the glands, so as to increase the action of the secretory ducts, and produce a greater secretion.

I may therefore now argue, whether one or more medicines are most proper to be employed

employed to get into the blood-vessels from the intestinal canal, or otherwise, so as to increase the secretions from any of the glands. In the first place, I do not know any medicine, which may be introduced into the blood-vessels, so as to increase the secretion from the lachrymal glands, the glands of the nostrils, and the glands of the ears; nor of any, excepting mercury, which can get into the blood-vessels so as to increase the secretion from the salivary glands.

Medicines can in no way be applied so as to increase the secretion from the glands, which open upon the mucous membrane of the lungs, excepting by first getting into the blood-vessels, and afterwards being secreted by the secretory vessels of the glands of the lungs. As far also as I have observed, or learned, there seem to be no medicines that can otherwise be got into the blood-vessels, than by being taken into the stomach, which will occasion any such secretion.

As far as my experience leads me, a mixture of medicines tending to increase the secretion from the glands of the lungs, in consequence of being thrown into the sto-

mach, and being absorbed into the blood-vessels, is much more powerful in increasing the secretion from the glands of the lungs than one singly. So far as I can confide in my own observation, it is better to mix squills with gum-ammoniac, than to employ either of them singly; and it is even better to mix gum-ammoniac, *assa foetida*, squills, and *colchicum* all together, than to employ squills and gum-ammoniac by themselves.

That medicines may get into the blood-vessels, and act as diuretics, there can be no doubt. The secretion of urine is one of the greatest secretions in the body, and it is proved by daily experience of mankind, that this secretion may be increased. In dropical cases, and some others, it is extremely difficult to increase this secretion; but I have no manner of doubt, from long experience, that a mixture of diuretics is much more likely to produce the effect than any one of them singly.

Purgatives are almost always taken into the stomach, and passing from thence into the intestines, evidently stimulate the ends of the excretory ducts, as appears from the short-

shortness of time between their exhibition and effect. I know well that it has been a common opinion, that evacuants alter the property of the blood, and convert the red particles, serum, and coagulable lymph, into the matter which is to be evacuated. This opinion is however grounded on no experience, and it would lead me into too diffuse an argument to show its improbability.

It has not been always practised to give purgatives into the stomach to produce the effect. There are many compound purgativements in Mesue. None of these have been employed however in modern practice, but it is to be observed, that they consist of a great number of different purgative substances mixed together. The multiplicity of my engagements, whilst I have been physician to St. Thomas's Hospital, has prevented me from ascertaining their effects, especially as the many new medicines, and new applications of medicines, which have been proposed, have occupied the attention of the physicians of that hospital. Most of these new medicines, however, have been rejected upon trial. I have only to say, as an apology for the incredulity of myself and

colleagues, that St. Thomas was hard of belief.

That substances applied to the skin in the form of ointment will be absorbed into the blood-vessels, and stimulate the glands of the intestines, and produce a greater secretion from them, is quite certain; as mercurial ointment has very frequently this effect; and it is not at all improbable, that other substances employed in the same way may have similar effects; as in this case too, and other cases, where medicines are applied to the skin in order to be absorbed, so as to get into the blood-vessels and produce a like effect, it may be better to employ several at once.

The whole of this argument may be placed in this point of view; the Constructor of the human frame has defended every part of the body subject to be exposed to external stimuli, with a covering through which these stimuli may act.

I take at present stimuli in the sense of every substance producing any effect on the motions of any part of the body.

The skin, for instance, is covered with the scarf-skin, and the scarf-skin with mucus,
so

so that whatever substance is applied to the skin, must act through the mucus and scarf skin, and therefore at a distance from the skin itself. This seems necessary, in order that every substance should act mildly and with its own peculiar effect. Thus an acid applied to the skin may act as a sedative, while the skin is covered with the scarf-skin and mucus; but if the mucus and scarf-skin be removed, and the same acid be employed, instead of acting as a sedative, it will occasion inflammation. Therefore, in order that substances acting in any particular way may produce their specific effect, it is necessary, that each should act mildly, and consequently, that several substances, tending to produce the same effect by the mild action of each in small doses, will have a greater effect of the same kind, than any one of them exhibited in a larger dose would produce.

That mixtures of medicines have been carried to a degree of absurdity, seems to be certain. This made me at first reprobate all mixtures of medicines having the same effect, and conceive that it would be much better to employ some simple medicine for

each particular purpose; but I have now been convinced, by long and repeated experience, that this is not well-founded. How far the extent of this doctrine may go, it is difficult to say, and whether all the medicines tending to have the same effect should be mixed together, or two or three, or four or five, or how many.

There are in different vegetables very often exactly the same substances. In a vast number of plants there is sugar; in a great number there is the same astringent juice; in many others there is the same indigo. If such juice be pure and free from all other substances, it never can be proper or useful to employ it as obtained from different plants. If it be not pure, but mixed with other juices of the plants in which it is found, it may be proper to mix the several plants together containing it, as the other juices of each of these plants may err in a different manner, and therefore the part of the body to which they are applied may bear a great many small errors better than one great one. If, however, the substance can be got pure, it would undoubtedly be much better employed singly.

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I have thus shown the ground on which I think that it is better to employ several substances, which have nearly the same effect, than one of them simply; and as this paper has been drawn out to so great a length, I must defer for the present the cases where medicines, possessing different qualities, may be combined together.

XXIX. *The Operation of Puncturing the Bladder above the Pubis, and through the Rectum, illustrated by Cases. By EVERARD HOME, Esq. F. R. S. &c. Read October 1, 1799.*

CASES of suppression of urine, in which the operation of Puncturing the Bladder has been performed, have been few in number, and the histories of them are dispersed through a variety of publications. In these accounts a particular detail of the cases is seldom given, only the general results, so that we have less knowledge of all the circumstances which attend this operation, than of almost any other in surgery. To make some additions to the records upon this important subject, is the object of the present paper.

So rarely has this operation been performed in London, that in the year 1777, when Mr. Reid, surgeon, in Chelsea, was collecting materials for publishing a pamphlet in favour of puncturing the bladder by the rectum, and applied to seven of the most eminent surgeons belonging to the different London hospitals for their opinions respecting it, there was only one of them, who

who had ever punctured the bladder ; and he only in two instances ; in one above the pubis, and in the other through the rectum ; and only one of the other six surgeons had ever seen it performed.

The three situations, in which this operation is performed, are in the perinæum, above the pubis, and through the rectum. There are cases published, giving an account of the event of each of these different modes ; but in an operation of such rare occurrence, no author that I have met with has given from his own observation successful cases of the different operations, explaining the symptoms, so as to allow of their being compared together, and the advantages and disadvantages of each fairly appreciated.

Having had an opportunity in the year 1788, of assisting the late Mr. Hunter in performing this operation above the pubis, in a case which terminated favourably, and having, in 1799, performed it in two instances through the rectum with equal success, it is my intention to state the particulars of these cases for the information of the Society.

A Case

*A Case of Suppression of Urine in which the
Bladder was Punctured above the Pubis.*

A Gentleman, thirty years of age, had laboured under symptoms of strictures in the urethra for nine years; and had been occasionally attacked with fits of strangury; these attacks were relieved by introducing a bougie, which instrument was used only on such occasions.

In January 1788, one of these fits of strangury came on; during the first two or three days his urine passed only by drops, but at last there was a total stoppage of it. This alarmed the attending surgeon, and after the suppression had continued for twenty-four hours, Mr. Hunter was sent for at twelve o'clock at night to perform some operation to empty the bladder. The state of the patient having been mentioned along with the message, Mr. Hunter desired me to accompany him, and to carry different instruments, that he might be enabled to act according to the circumstances of the case.

When we were introduced to the patient, he had sickness with retching, and a slight hiccup;

hiccup ; no instrument could be passed by any effort into the bladder, although repeated attempts were made for that purpose ; it therefore appeared to Mr. Hunter, that no time was to be lost in relieving the bladder. On examining the belly, the tumour extended as high as the navel, and the parts were sore to the touch ; by introducing a finger into the rectum, the bladder was felt to press backward into the hollow of the sacrum.

In considering the best situation for puncturing the bladder, Mr. Hunter would have preferred the perinæum, and would have performed the operation in the manner recommended in his Treatise on the Venereal Disease, that he might have emptied the bladder and removed the stricture at the same time ; but in the night he thought the circumstances unfavourable for so delicate an operation ; he was unwilling to make the puncture through the rectum, from an idea that the orifice could not be continued open till the stricture was removed ; he therefore determined to make the puncture above the pubis.

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In performing the operation, he felt for the os pubis as a guide, choosing to be as near it as possible, that he might avoid entering the cavity of the peritonæum; but the parts were so distended, that he could not feel the bone, and was therefore obliged to guess at its situation.

He first made an opening through the skin with a lancet, and then passed the trochar perpendicularly down into the bladder. Upon withdrawing the trochar, the urine rushed out with violence through the canula; a flexible gum catheter was then introduced, and the canula of the trochar withdrawn over it; the catheter was retained in its place by tying it to a bandage passed round the body directly above the opening.

In consequence of the distention of the bladder, and the opening into it, there was a good deal of pain in the abdomen, soreness when the external parts were pressed, heat on the skin, and frequency of the pulse, which led to a suspicion of there being an inflammation of the peritonæum. Leeches were twice applied to the abdomen, fomentations were used, and an application
of

of spirits kept almost constantly upon the belly; saline draughts, gently opening medicines, and anodyne clysters were occasionally had recourse to. These symptoms subsided, and the urine came principally and freely by the side of the instrument.

The next object was to dilate the stricture; this was attempted by the bougie; bougies of a small size sometimes seemed to pass, but there was no proof of their having really done so.

About a fortnight after the operation, the cellular membrane appeared at the orifice of the wound, like wet lint; a swelling was perceived on each side, extending to the spine of the os ilium, in which there was an evident fluctuation; this arose from the formation of matter in consequence of the urine having insinuated itself into the cellular membrane.

After persevering with the bougie for three weeks without making any progress, the caustic was used; when it had been applied twice, a small silver sound was passed, which found its way into the bladder. This was kept in the urethra for six days, and when it was withdrawn, one of a larger size

size was passed, and retained there for five days. Some of the water now passed by the urethra at the side of the sound, but with great pain. In five weeks from the time of the operation, the patient was evidently beginning to sink, had a wild desponding stare, and all the common symptoms of hectic fever; it therefore appeared absolutely necessary to remove the catheter from the artificial opening in the bladder as soon as it could be done with safety. The silver sound was taken out of the urethra, and an attempt was made to pass a flexible gum catheter, which fortunately found its way into the bladder.

The moment this was accomplished, the catheter which had remained in the bladder forty days, was withdrawn from the opening above the pubis, and it brought along with it a quantity of cellular membrane in the state of slough; this was followed by near a pint of matter.

From this time the patient began to mend in his health; in a few days the orifice of the wound was almost closed, little of the urine coming that way, as the greater part was regularly drawn off by the catheter in the

the urethra. In six days the catheter was taken out; upon withdrawing it, the surface was found incrusted with calculous matter, so as to hurt the parts as it passed along the canal, and another was immediately introduced.

About this time the wound above the pubis healed up, but very soon broke out again, and discharged a quantity of matter without urine, which led to the belief that the orifice in the bladder was healed. He was now allowed to sit upon a couch, and eat whatever agreed with him.

After the second catheter had remained in the urethra six days it was withdrawn, and was found incrusted as much as the former; another was immediately introduced. The wound above the pubis healed a second time; at the end of four days the third catheter was withdrawn, and the parts left to themselves; in four hours after the catheter had been taken out, the patient had an inclination to make water, which he did with great freedom; this was at the end of the eighth week, and he continued to do so for several days, when the wound above the pubis broke out again and dis-

charged matter, and afterwards urine. In three days the orifice of the wound began again to contract, the urine passed more freely by the urethra, and the wound once more healed. Matter collected again on each side of the abdomen, and there was discharged externally a quantity of foetid matter. After some days a fresh opening took place on the right side, giving a free vent to the matter lodged there; the original wound now healed entirely, but another abscess formed near the groin; this broke and discharged freely; both these openings healed in a short time, and in thirteen weeks from the time of the operation, the parts were all consolidated.

Eleven years have now elapsed, and the patient has continued well, and has made water freely ever since.

*Cases of Suppression of Urine in which the
Bladder was Punctured through the Rectum.*

CASE I.

A Gentleman, forty-six years of age, twenty-five years ago, had a gonorrhœa; the inflammatory symptoms of which were removed in six weeks, but the discharge continued above a year. This led him to consult different practitioners, who employed a variety of injections to get rid of it; after the use of these, there was a greater frequency in making water than he had before experienced, and an uneasy feel along the urethra, particularly near the bladder. These symptoms continued, and rather increased for six years, when a new symptom came on, which was an occasional want of power to make water, lasting a few seconds and then going off.

These stranguries increased gradually in frequency and duration, and in eighteen years they had rendered the bladder so irritable, that it never retained more than three ounces of water at a time, and very often

not half that quantity. The patient's mind was kept in a constant state of apprehension of a complete stoppage; his general health was much impaired, and the slightest exposure to cold affected his bladder so as to give him incessant calls to make water.

Under these circumstances I was consulted; it was found upon examination, that strictures in the urethra had brought on the present symptoms. For the removal of these he put himself under my care, and that he might have every necessary assistance, took lodgings near me.

The first stricture met with was four inches and a half from the external orifice. On the 25th of June, I applied a bougie, armed with the *argentum nitratum*, to this stricture, which gave him considerable local pain, but the application relieved the irritation in the bladder, and he made water more freely than before; the same treatment was used every other day, and three applications were found sufficient to open this part of the canal.

There was a second stricture at six inches from the external orifice; to this the armed bougie was applied on the first of July, and in

in a few hours one of his usual attacks of irritation came on, with ineffectual straining to make water; this was relieved by passing a small bougie into the bladder, which however could not be done till after several ineffectual trials.

July 2d, in the evening, the irritation returned with greater violence, and was very severe; no bougie could be passed, and a starch clyster, with thirty drops of tincture of opium was thrown up; this was not retained, and the irritation increased. Upon a second trial, at eleven o'clock, a small bougie passed, and he discharged about two ounces of urine in a small stream, which relieved him. In an hour the irritation returned, attended with a slight degree of delirium, great thirst, restlessness, and anxiety. At one o'clock in the morning no water had passed, and a bougie could not be introduced; an opiate clyster was thrown up, containing forty drops of tincture of opium; in half an hour another was administered with sixty drops, but the general irritation and painful sensations increased, and thirty drops of tincture of opium were given by the mouth. In this state the pa-

tient, in a fit of despair, got a bottle of tincture of opium, and while the nurse went into the next room, took, at two different times, 180 drops; so that in the space of an hour and a half he had taken 210, besides what was contained in the clysters.

This increased his delirium; at ten o'clock in the forenoon he was put into the warm bath, and after coming out, a small catgut bougie passed into the bladder, and brought off about two ounces of water; this relieved him very much. He passed no water during the rest of the day, and the warm bath was repeated in the evening; in the course of the night he passed nearly a pint of water, about two ounces at a time.

July 4th, he took an opening draught, which procured him two or three motions. In the course of the day he voided a good deal of urine in small quantities, with straining and much pain. These symptoms were aggravated by the piles, to which he had been accustomed, and which were now forced out, and were very large; they were punctured, and bled freely, which diminished their size, but did not lessen the pain.

July

July 5th. Passed his urine with tolerable ease through the day in small quantities, but a suppression came on in the night, and at four in the morning he was in such a state of irritation as to give an alarm of his losing his senses. In this state he expressed the most anxious desire, that an opening might be made to empty the bladder; and his sufferings for the last three days had been so great, that I thought myself justified in complying with his request.

The instrument I made use of was the long curved trocar, recommended by Pouteau, only made flat instead of being cylindrical, which rendered the point better adapted for wounding the bladder, and the flattened form was considered as better fitted for lying without inconvenience in the rectum.

This instrument I have had by me for many years. I passed my finger up the rectum and felt the bladder, which was less prominent than it was reasonable to expect; upon this finger I introduced the instrument with the point concealed in the canula, up to the part which I intended to puncture, then pushed the instrument into the bladder;

on withdrawing the piercer, the urine flowed freely through the canula ; the quantity evacuated was only four ounces, but as the bladder for many years had not retained more than three ounces, this was a large quantity in the present irritated state of that viscus.

The operation was performed on the 6th of July, at half past four in the morning ; the wounding of the bladder gave him no sensible pain, and he felt very easy the moment the urine was evacuated. The canula was confined in the rectum by a bandage.

As it was intended that the wound in the rectum should be kept open till the stricture was removed, the canula was retained in the bladder till the edges of the wound should be consolidated by inflammation ; after which, the urine passing through the fistula, would prevent its closing till that fluid was conducted by another channel.

The urine was passed through it involuntarily, but did not flow constantly ; and when it was forced out he felt a pain in the glans penis. He slept in the course of the forenoon more than he had done for two

two or three days, and was tranquil and comfortable; his mind was also at ease by having lost the dread of a stoppage, which before affected him nearly as much as the reality.

In the evening he took three ounces of *mistura camphorata*, with thirty drops of tincture of opium. In the night, the same quantity of that mixture was given, with twenty drops of tincture of opium, in consequence of the pain and irritation experienced when the urine was forced out by the action of the bladder.

July 7th, The urine was passed at longer intervals, but the straining at these times was great, and attended with pain; it felt to him that some drops lodged at the neck of the bladder, and he could not resist the inclination of making an effort to discharge them. The same opiate draught was repeated at night, but did not prevent him from being very restless.

8th. He took an opening draught, which operated and relieved him very much; there was no inconvenience from the instrument lying in the rectum. The intervals between

the times of making water were longer than usual; the opiate draught was repeated at night; he slept a good deal, and was much refreshed.

10th. The armed bougie was applied a second time to the stricture, after which he had less irritation in the urethra at the time of the water passing through the rectum.

11th. The irritation in the bladder was considerable, and the urine did not pass readily through the canula, which induced me to remove it, as it had remained there five days. The sides of the wound between the bladder and the rectum were considered to have had sufficient time to be consolidated by inflammation, to prevent the urine from insinuating itself into the cellular membrane. Upon removing the canula the irritation subsided, and he slept well in the night with the usual opiate.

12th. The second stricture was found to be removed, and the armed bougie was applied to a third stricture, about seven inches and a half from the external orifice. The urine was passed at regular intervals of half an hour through the wound without uneasiness.

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The usual opiate was repeated at night ; he slept well, and a few drops of water passed by the urethra.

14th. Towards the afternoon he had a violent attack of irritation and constant inclination to make water, which came away with great uneasiness. He took thirty drops of tincture of opium which made these symptoms subside. After this three ounces of urine passed at one time, by the urethra, without pain, and the same quantity continued to pass once an hour. He had a very comfortable night.

15th. The armed bougie was applied a second time to the third stricture ; it gave a great deal of local pain, which lasted for an hour ; his water passed easily through the day ; the opiate draught was repeated, and he slept tolerably well.

16th. The opening medicine was repeated, and he had no irritation in the bladder during the day ; in the afternoon the greater part of the urine passed by the rectum, a small proportion by the urethra ; the opiate draught was repeated, and his night passed very quietly.

17th. The

17th. The armed bougie was applied a third time to the third stricture, and the water passed intirely by the urethra without much pain or straining; the night draught was repeated, and he had a quiet night.

18th. About two o'clock in the day he voided some blood through the penis, and also by the rectum, with a large piece of slough, and was very easy the rest of the day; the opiate draught was repeated, and he had a good night.

19th, The urine passed intirely through the rectum; he had a good night without the opiate draught.

20th. The armed bougie was a fourth time applied to the third stricture; the local pain was very severe, and there was a small discharge of blood; the pain lasted near two hours, but he had no inclination to make water for six hours; the water passed by the rectum without any straining, and he did not again make any water for six hours.

21st. About six o'clock in the morning, an irritation to make water came on, and returned at short intervals; the urine passed
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through the urethra mixed with blood ; this went off in the course of the day.

23d. The unarmed bougie, which was used preparatory to introducing the armed one, passed into the bladder; the water came principally by the urethra, but with irritation and pain in the glans penis. He was restless in the fore part of the night, with irritation to make water, and took an opiate, which relieved him.

27th. His urine passed by the rectum till the middle of the day, when a large slough came away by the penis, and immediately after it half a pint of urine in a full stream. This slough was probably that separated from the wound in the bladder, which had fallen into the cavity. In four hours he made nearly the same quantity of water at one time.

No water had passed by the rectum after the 27th, nor was it voided oftener than once in four or five hours; so that in three weeks from the time of the operation, the strictures in the urethra were removed, and the orifice in the bladder no longer gave a passage to the urine.

On

On the 31st he went out an airing for the first time, his strength and appetite being much improved.

August 2d. The unarmed bougie was passed to ascertain that the urethra continued free from stricture, and went more freely into the bladder than before.

12th. He was so well in every respect, that he went to the sea to bathe for the benefit of his general health.

In this case the wound through the rectum continued open for three weeks, the time that was required to remove the obstruction, and healed up as soon as there was a free passage by the urethra. Had the strictures proved more obstinate, there is every reason to believe the wound in the rectum would have remained open as long as it was necessary.

CASE II.

A Gentleman, aged thirty-two, when fifteen years old, had a gonorrhœa, which, from great inattention in the patient, and from the use of irritating injections, did not subside

subside in the usual time. The irritation extended itself along the urèthra to the bladder, and brought on frequency of making water, attended with straining and occasional strangury.

These symptoms never went intirely away; they were at times more severe, at others less so; and there were intervals of months in which he only made water once in four or five hours; these however were rare, and in general the bladder could not retain more than three or four ounces of water at any one time.

There was this peculiarity in the case, that when the urine stopped, it produced a swelling behind the scrotum; when this was pressed, some mucus came away, and was followed by urine; these occasional stranguries sometimes lasted seven or eight hours before they went off. He had recourse to the common bougie, but none could be made to pass into the bladder; afterwards the use of the caustic was attempted, but the surgeon had not confidence enough in that mode of treatment to induce him to persevere in it, and after a few unsuccessful trials he left it off.

In August 1799, his complaints became worse than before ; every morning there was a stoppage of urine that lasted several hours, which was with difficulty relieved by opium ; under these circumstances he came to London, and put himself under my care.

As no bougie could be passed into the bladder, and there was reason to believe, from the account of the case, that a sac or bag had formed in the peritonæum behind the stricture, the only chance of giving him relief appeared to be by applying the caustic ; and should the slough formed by the application at any time stop the small orifice of the stricture, an opening must be made into the bladder to relieve the symptoms of suppression, and admit of the prosecution of the cure.

Under these circumstances I entered upon the treatment of the case, and had the patient in lodgings near me, that every necessary attention might be given which the symptoms required.

24th. The armed bougie was applied to a stricture three inches distant from the external orifice ; the pain which this application produced was trifling, and it was not
fol-

followed by any difficulty in the passing of his urine.

26th. The application was repeated to the same stricture.

28th. The first stricture was found to have been destroyed by the second application, as the bougie now passed on six inches to a second stricture, to which the armed bougie was applied.

30th. The application was repeated to this second stricture, and in the evening the patient was unable to make water, although there had been neither pain nor irritation. An opiate injection, containing forty drops of tincture of opium, was thrown up in the evening; and a draught, containing twenty drops, was taken at twelve o'clock at night, and repeated at two in the morning.

31st. At seven o'clock in the morning the bladder was found to be much distended, as he had made no water for sixteen hours; the irritation to make it was very great, and almost constant; and no instrument whatever could be made to pass into the bladder. It was proposed to puncture the bladder, without waiting till the parts were still more irritated, and the patient's strength and spirits

rits more exhausted. This was considered not only as a means of giving relief to the present symptoms, but of enabling us afterwards to prosecute the cure. These reasons induced the patient to give his consent, and the operation was performed exactly in the same manner as in the former case. A pint and a half of urine were drawn off, and the instrument secured in the rectum.

He felt immediate ease, in an hour fell asleep, and passed the day perfectly tranquil. The urine did not constantly pass out at the canula, although no plug was put into it; the first time of any coming away was at half past ten, three hours and a half after the operation; he made water again at four. His pulse was not quicker than natural, and he had only slight irritation in the urethra.

The reason why the urine does not constantly issue through the canula is, that its orifice is situated at some distance from that part of the bladder where the ureters open, and its end projects into the cavity like the waste pipe in a cistern, which can have nothing pass through it till the level of the water is raised above its orifice.

September

September 1. He slept tolerably well during the night; passed his urine through the canula every four or five hours, in the quantity of nearly four ounces each time, and he had little or no uneasiness in the bladder or urethra.

Towards the afternoon the canula was obstructed by the mucus from the bladder, which was removed by passing a wire through it; the urine however did not flow readily till he got upon his knees, in which posture half a pint came away, and a few drops by the urethra, with exquisite pain.

In the evening he had a paroxysm of fever, or fit of an ague, attended by headache. A pint of warm water was thrown up as a clyster, which brought away a great deal of wind, and a copious stool. He was afterwards materially relieved. He took fifteen drops of tincture of opium, and had a quiet night.

2d. He was easy during the day, and had very little pain in the urethra. The urine did not pass readily by the tube, which occasioned his having a restless night.

3d. The armed bougie was applied to the stricture six inches distant from the external orifice, which gave less pain than the former

applications. In the afternoon the canula was found to give more uneasiness from not allowing the urine to pass; and as it had been in the bladder three days and a half, it was judged adviseable to remove it. This gave great relief, the urine however did not afterwards come through the wound, but by the urethra. He took fifteen drops of tincture of opium, and passed a restless night. He made water four times before morning by the urethra, nearly four ounces each time.

4th. At six in the morning he took an opening medicine, which operated in four hours, and relieved his uneasiness; he made water during the day every three or four hours, and passed a quiet night, sleeping three hours at a time.

5th. The armed bougie was applied; he had no uneasiness during the day, and passed a quiet night.

7th. The stricture at six inches was found to be destroyed, and another was met with at seven inches, to which the armed bougie was applied. In the afternoon he made his water in a better stream.

9th. The armed bougie was again applied to the stricture at seven inches; this brought on a swelling in the perinæum, which lasted

fe-

several days, but did not impede the passing of the urine, nor did he afterwards experience an attack of strangury, although the last stricture was not destroyed in three months ; and the armed bougie was applied every second or third day during the whole of that time.

In this case the urine never came through the wound in the bladder after the canula was withdrawn, which is to be attributed to its finding a passage by the urethra, and the quantity the bladder held at any one time was insufficient to distend that viscus so much as to reach the wound in it made by the operation.

In the former case the bladder was less distended, and therefore was wounded near the prostate gland, which is probably the reason why the urine found a more ready passage through the canula ; and when it did, why the bladder was more completely evacuated.

From this circumstance it would appear that there is an advantage in the puncture being made as near the neck of the bladder as it can be done with safety.

From these cases we are enabled to draw the following conclusions respecting the operation of puncturing of the bladder.

When the puncture is made above the pubis, the canula which encloses the trocar is not to be removed, till the surrounding parts have been consolidated by inflammation, so as to prevent the urine in its passage out from insinuating itself into the neighbouring parts, for wherever the urine lodges, mortification takes place. Any advantage therefore, which may arise from a more flexible instrument remaining in the bladder, is more than counterbalanced by its not filling compleatly the aperture through the coats of the bladder, and allowing the urine to escape into the cellular membrane.

When the coats of the bladder are inflamed and irritated to a very great degree, a wound in them is not necessarily productive of any bad consequences; and when these symptoms are brought on by a retention of urine, all that is requisite for their removal is, not allowing any quantity of water to be accumulated in the bladder.

When the puncture is made into the bladder through the rectum, it is not necessary to retain the canula in the orifice beyond the time in which inflammation consolidates the sides of the wound, as there is no danger of the aperture closing up,

up, till there is another passage made for the urine*.

The wound in the rectum, whether it has a canula retained in it or not, does not allow the urine to escape, till a sufficient quantity is collected to make the coats of the bladder act for its expulsion; and the quantity necessary for that purpose will vary according to the state of the bladder at the time.

The bladder, although contracted to a small size by long continued irritation, almost immediately on being relieved from that irritation, has a power of recovering itself, and allowing of a much greater degree of distention; otherwise the bladder in the second of these cases, which had not for many years retained more than three ounces of water at any one time, could not, in four days after the last stricture was destroyed, have retained half a pint.

* The cylindrical trocar recommended by Pouteau appears preferable to the flattened one, since it cannot be so readily obstructed by mucus.

Since this paper was sent to the press, another case of Stricture, which required

the bladder being punctured, has come under my care; and, as it throws still further light upon this operation, I have annexed a short account of the most material circumstances.

Third Case of puncturing the Bladder through the Rectum.

A Gentleman, forty years of age, had a gonorrhœa in the year 1777, for the cure of which he used an injection; this irritated the urethra so much, as to bring on a suppression of urine almost immediately after its application, which lasted three days, and then went off. He continued tolerably well till 1790, when the urethra had become so much contracted, as to make the passing his water a very tedious and difficult operation; and he believes, that his bladder was never entirely emptied. By the use of bougies the passage was dilated so as to allow of a tolerable stream of urine, but during their use he had several partial suppressions. In 1796 he was again obliged to return to the use of the bougie, but was unable to pass one of the smallest size into the bladder; and from that time has suffered severely from occa-

sional suppressions, great discharges of mucus, and a constant gleet. His urine, under the most favourable circumstances, only passing in drops.

In November, 1799, he put himself under my care; the armed bougie was applied to a stricture five inches and a half from the external orifice; this application was repeated seven times, without any irritation being brought on, or an increased difficulty in voiding the urine. This stricture gave way, and the armed bougie was applied to a second at seven inches: the first and second applications to this stricture were attended with no particular symptoms; but after the third, which was on the 24th of November, a complete suppression came on; this lasted eight hours, when, in consequence of having taken fifty drops of tincture of opium by the mouth, and the same quantity in a starch clyster, he made an ounce and a half of water. In the course of the night the pain and uneasiness increased, and the fifty drops of tincture of opium were repeated.

25th. He made about two ounces of water; a clyster of warm water was thrown up, which relieved his uneasiness, and he passed

the night with tolerable ease, and made half a pint of water.

26th and 27th. He continued in a state of great irritation, occasionally passing small quantities of water and mucus, but never enough at any one time to relieve the bladder.

28th. The bladder was very much distended, and distinctly felt above the pubis; its outline was even conspicuous to the eye. In this state I proposed performing the operation of puncturing the bladder through the rectum, which was immediately assented to. For the reasons already given, I used the trocar recommended by Pouteau, with a cylindrical canula. Sixteen ounces and a half of urine were discharged through the canula: the patient felt no pain in the operation any where but in the glans penis, and that was only momentary; it however returned afterwards frequently in the same part. The canula was left in, and he felt perfectly easy, all his distresses being removed. The urine passed away continually without any effort, or even the patient's knowledge. He had a tolerably quiet night, and slept the latter part of it.

29th. He complained of distention of the
bowels

bowels from wind. In the afternoon the urine came away at intervals of half an hour; the verge of the fundament was excoriated by the urine passing through it. He had a very good night till one o'clock, when, attempting to expel some wind downwards, the canula was forced out of the bladder, which made him uneasy and restless the rest of the night.

30th. At nine o'clock in the morning, the canula was withdrawn from the rectum; and in the course of the day the urine passed readily through the rectum.

30th. The use of the caustic was resumed, the water passing at intervals by the rectum, and a few drops by the urethra; there was an unusual flatulence in the bowels, and great languor and debility.

These symptoms in a few days subsided.

Dec. 5th. The urine continued to pass freely through the orifice in the rectum.

Jan. 6, 1800. Although the last stricture is not yet destroyed, all the distressing symptoms have subsided, and the patient is able to retain his water for six or eight hours at a time.

When the urethra is perfectly quiet, the

water now comes with tolerable freedom through that canal ; and when it is disturbed by the application of the armed bougie, the urine finds a passage by the orifice through the rectum, so that I am enabled to prosecute the cure ; and judging, from the progress already made, there is no reason to doubt of its being soon completed.

The cylindrical canula has an advantage in giving a more ready passage to the urine, and leaving an aperture in the bladder, by which it is afterwards more freely discharged ; but its form, admitting of being embraced by the sphincter muscle, is unfavourable to the escape of wind, or the other contents of the bowels.

In this case the air in the rectum having forced out the canula as soon as the inflammation upon the orifice in the bladder had subsided, so as to admit of the canula disengaging itself, affords us a criterion in practice of the proper time for withdrawing the canula, which may be done in thirty-seven hours, or as soon as suppuration comes upon the wound in the bladder.



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